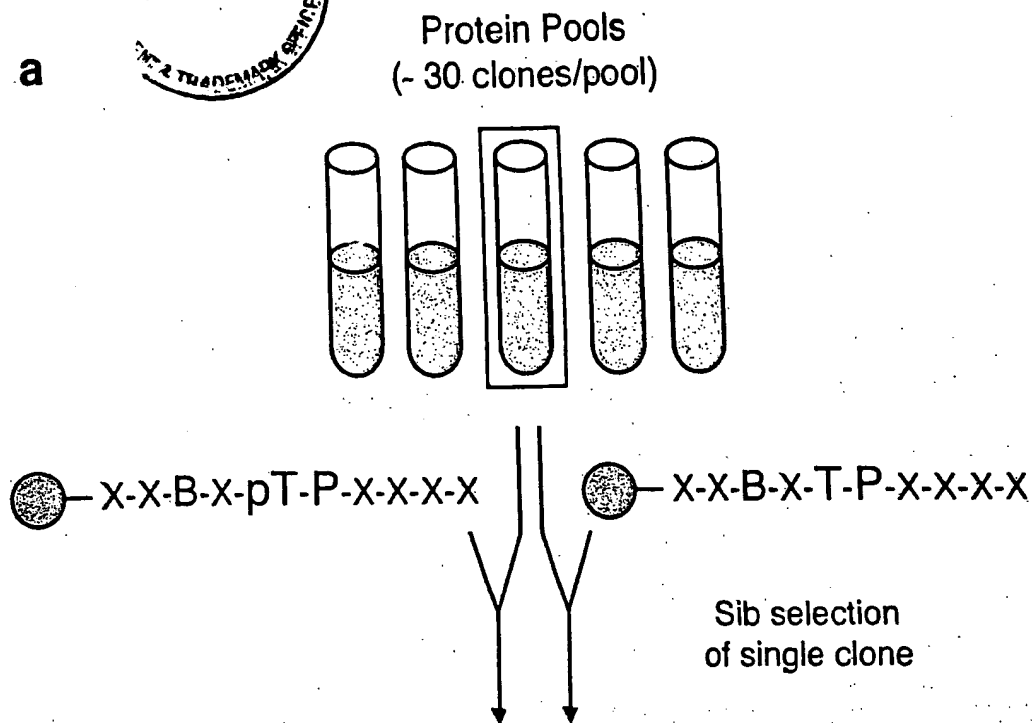


a



b

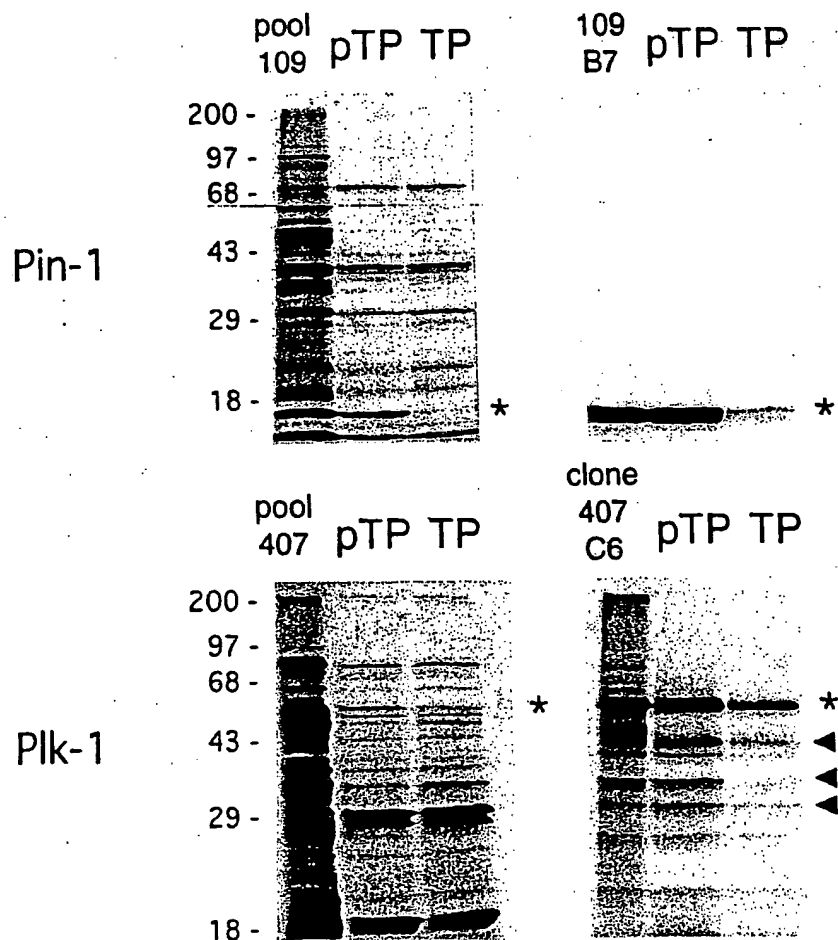
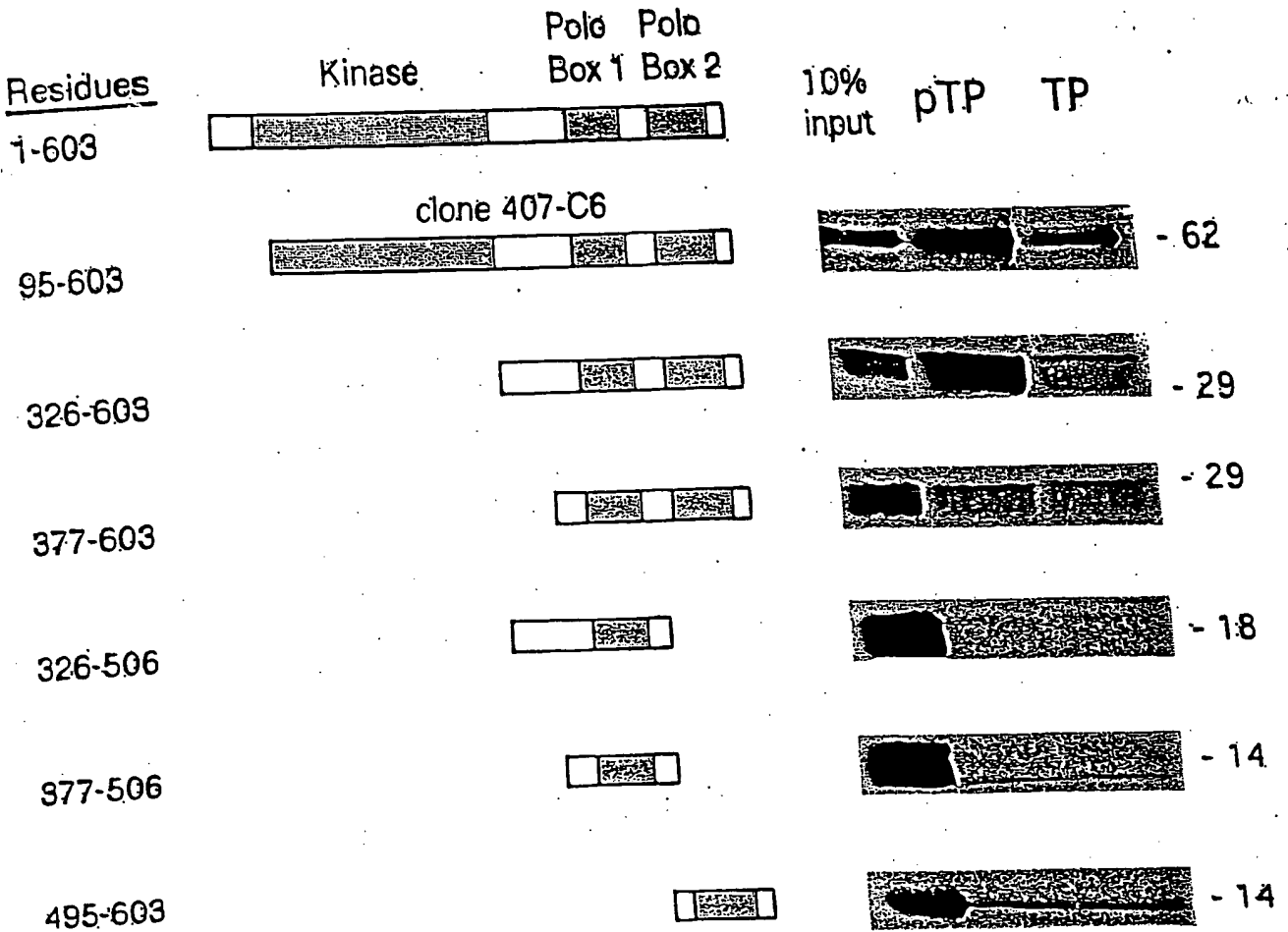


Figure 1

BEST AVAILABLE COPY

Figure 2

a



b

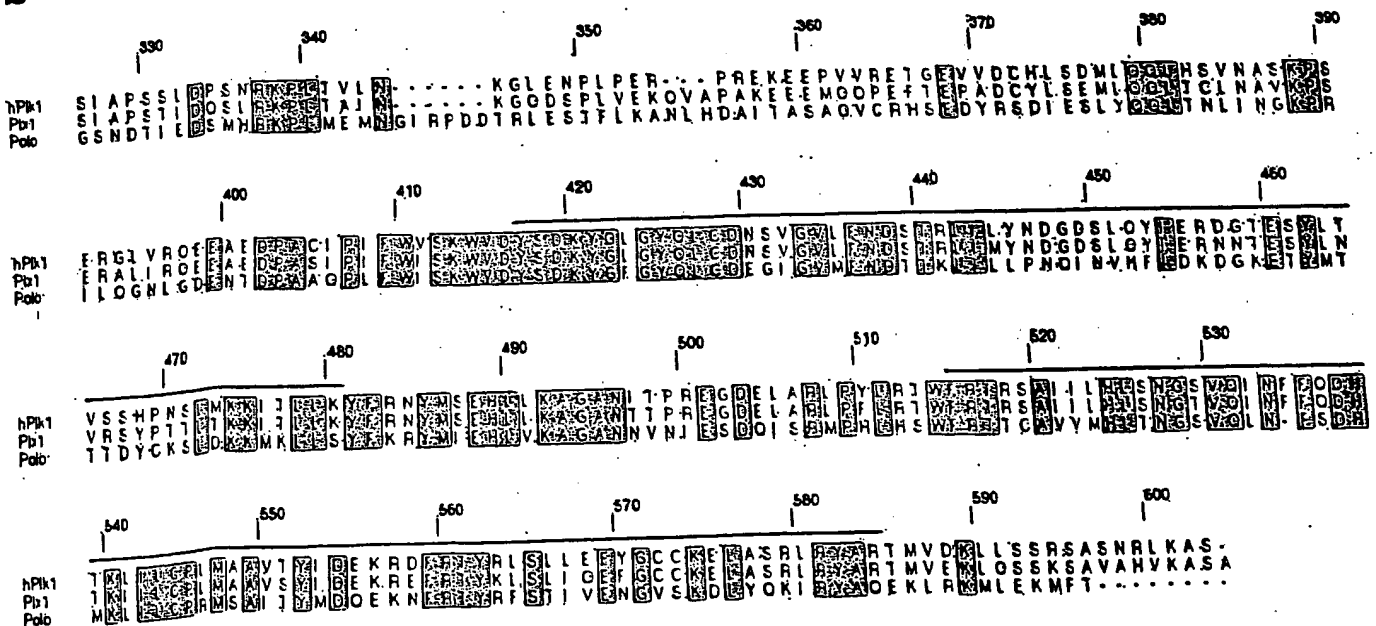
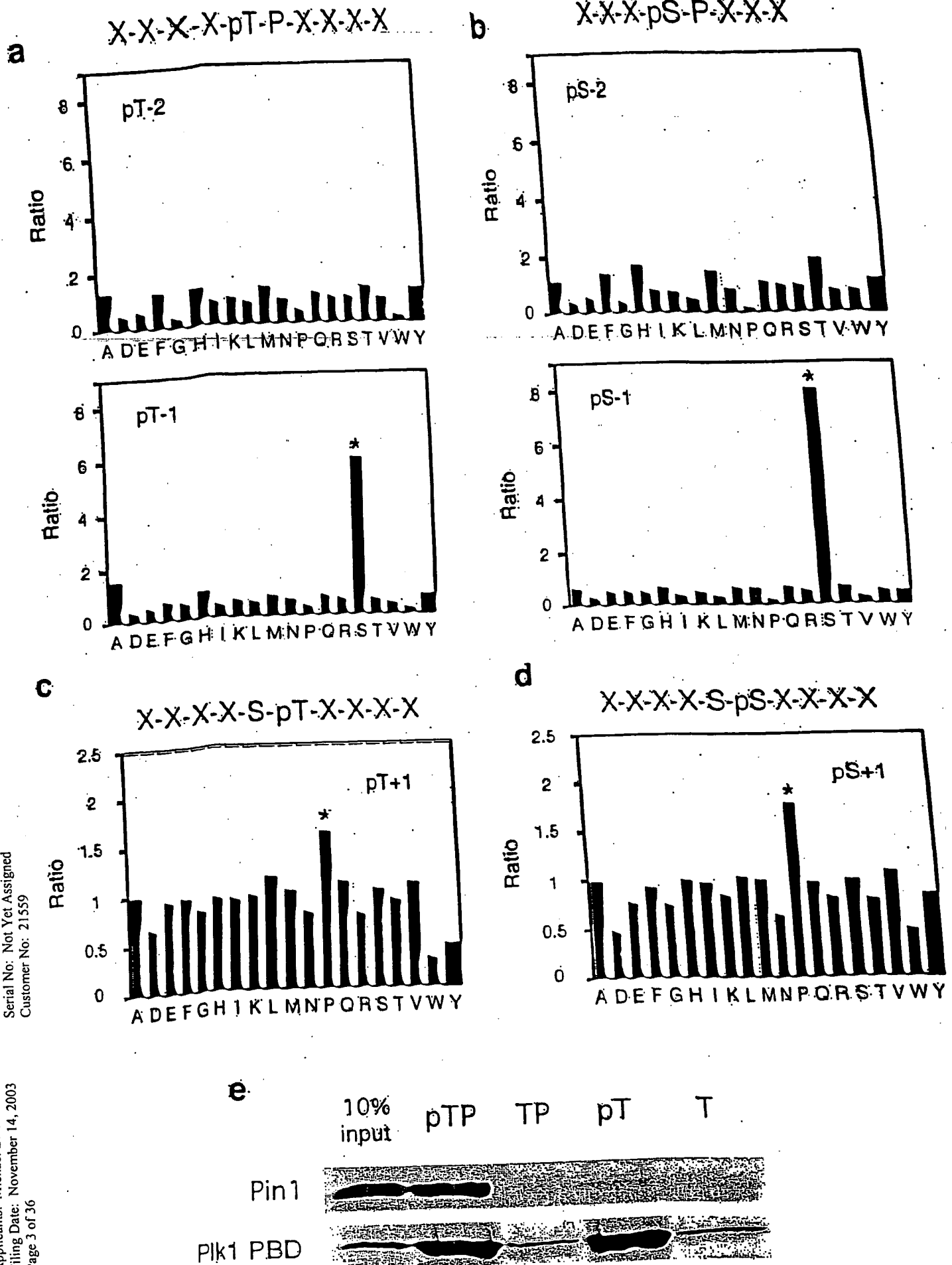
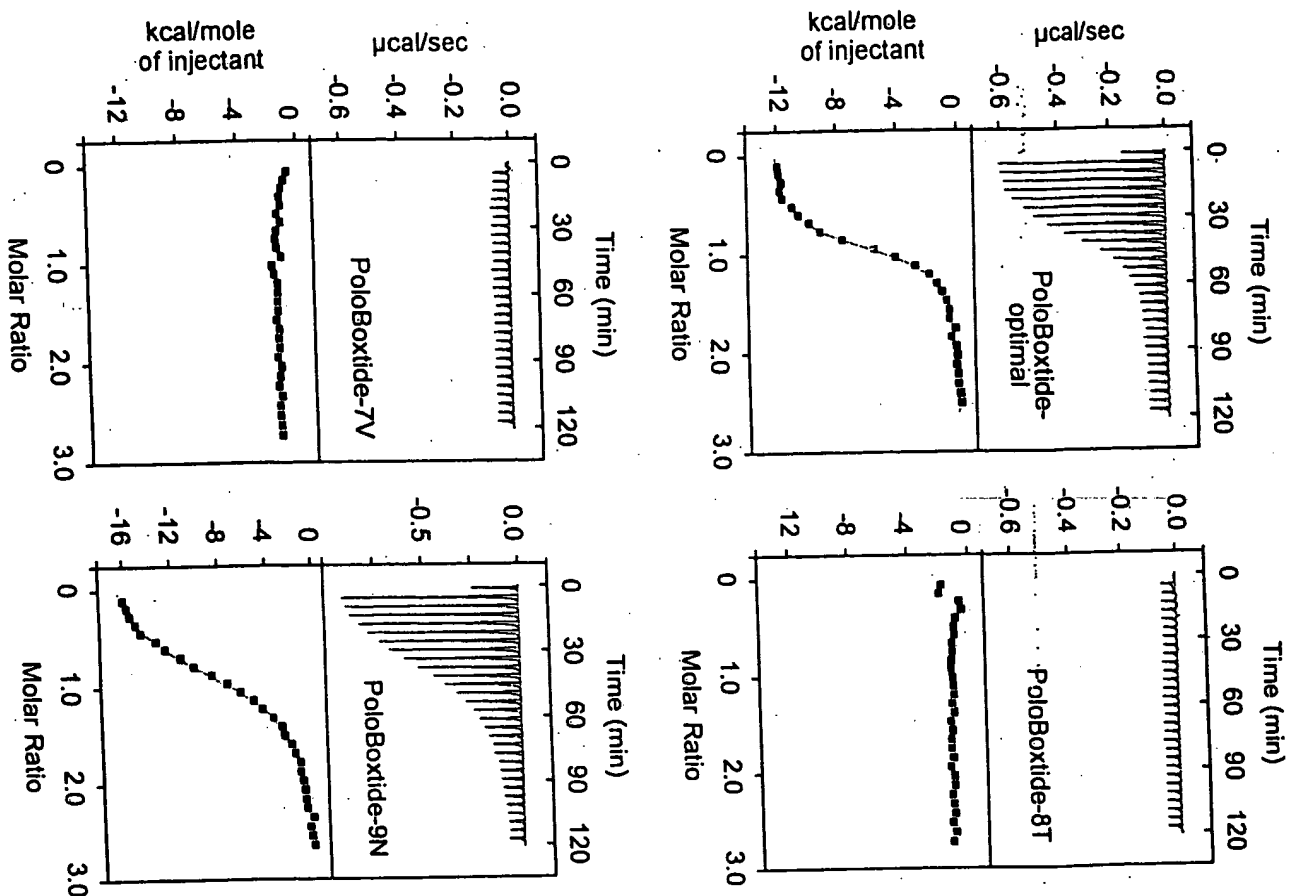


Figure 3





Peptide binding affinities for the Plk1 Polo Box Domain		
Peptide name	Peptide sequence	K _d
PoloBoxide-optimal	MAGPMQ-S-pT-P-LNGAKK	280 ± 27 nM
Effect of pT		
PoloBoxide-8T	MAGPMQ-S-T-P-LNGAKK	N.D.B.
PoloBoxide-8PS	MAGPMQ-S-pS-P-LNGAYKK	2.1 μM
PoloBoxide-8PY	MAGPMQ-S-pY-P-LNGAYKK	N.D.B.
Effect of serine at pT-1 position		
PoloBoxide-7V	MAGPMQ-V-pT-P-LNGAKK	N.D.B.
PoloBoxide-7A	MAGPMQ-A-pT-P-LNGAYKK	N.D.B.
PoloBoxide-7G	MAGPMQ-G-pT-P-LNGAYKK	N.D.B.
PoloBoxide-7C	MAGPMQ-C-pT-P-LNGAYKK	N.D.B.
PoloBoxide-7T	MAGPMQ-T-pT-P-LNGAYKK	N.D.B.
Effect of proline at pT+1 position		
PoloBoxide-9N	MAGPMQ-S-pT-N-LNGAKK	1.5 μM

Figure 4

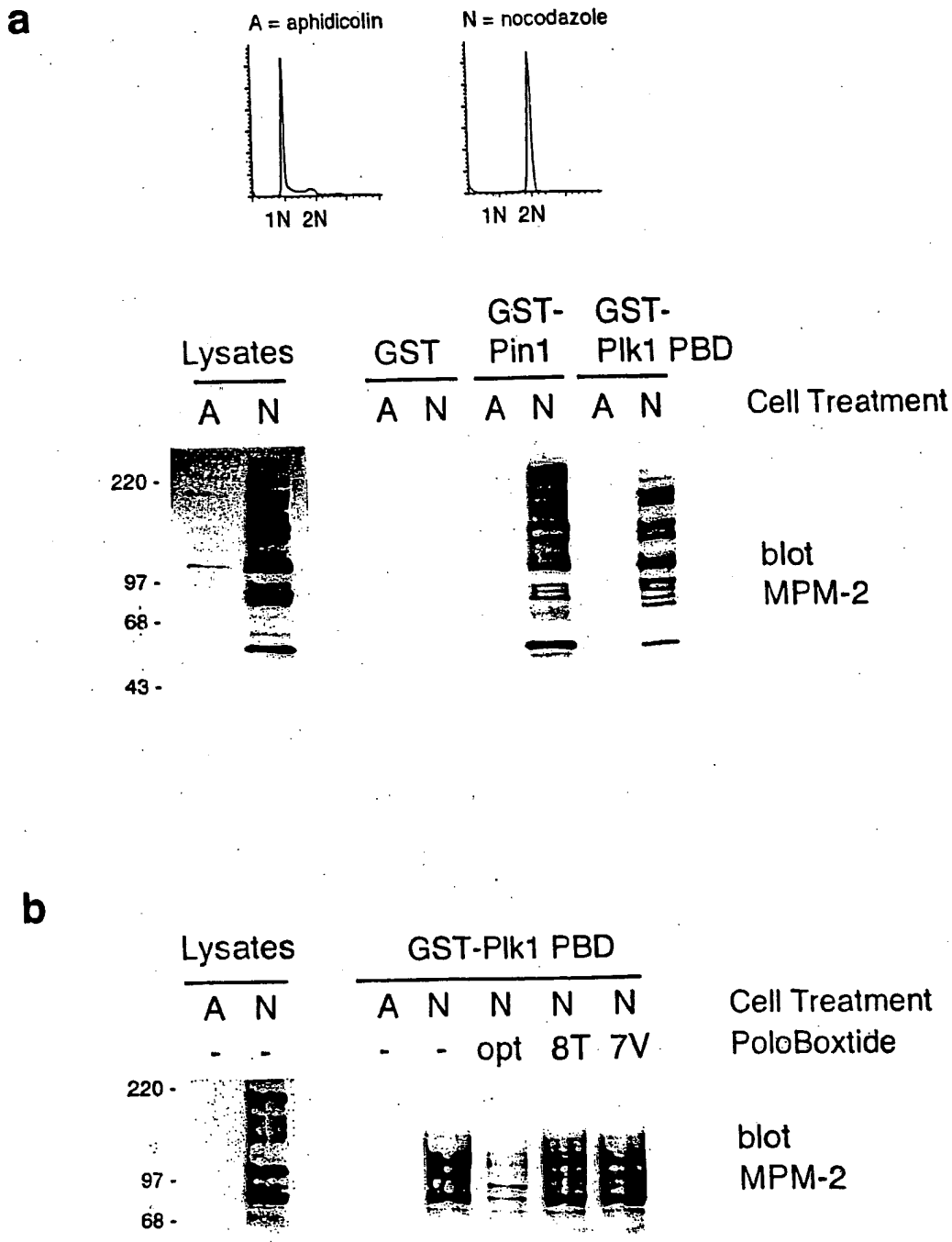


Figure 5

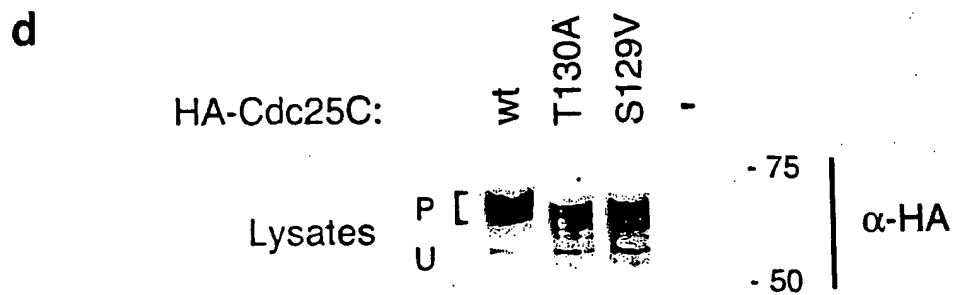
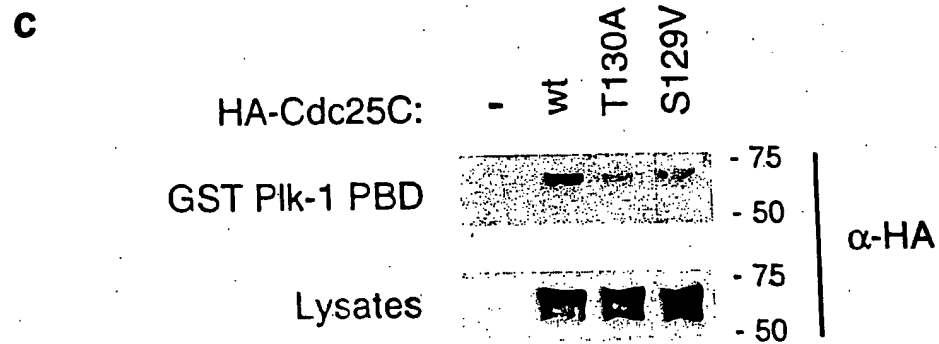
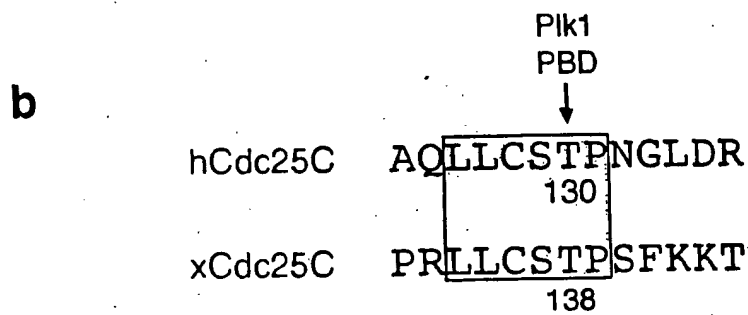
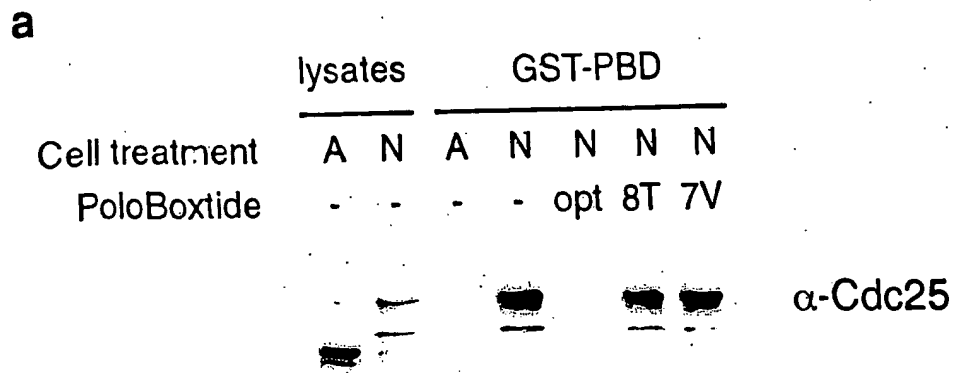


Figure 6

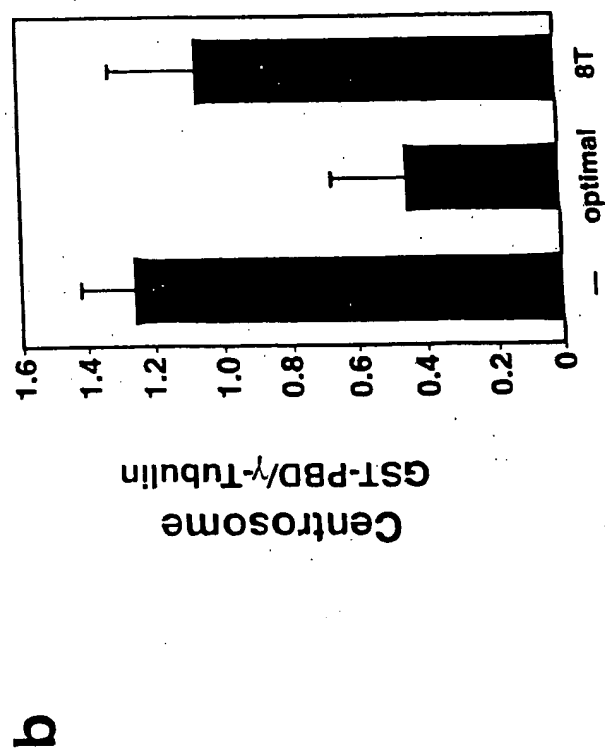
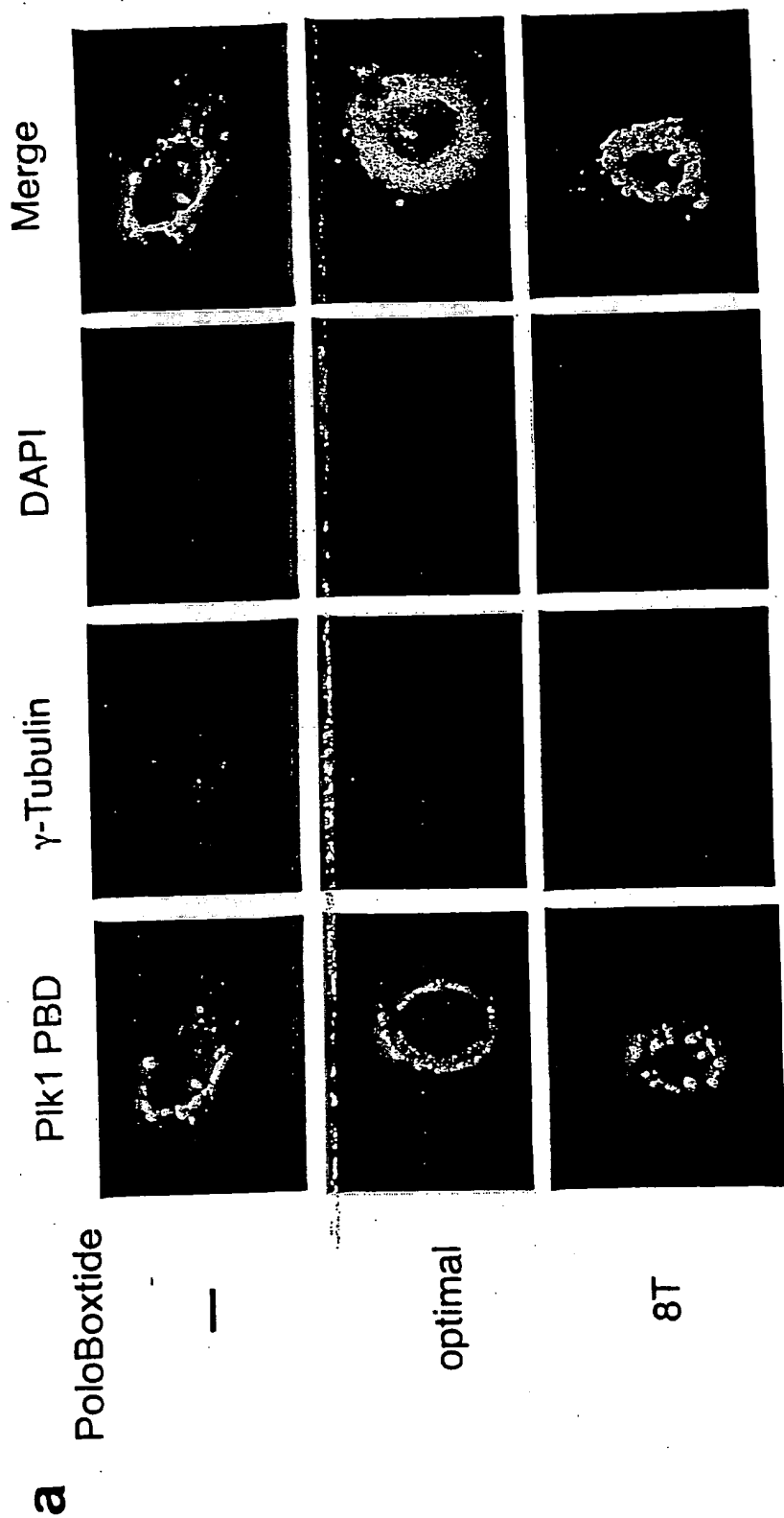


Figure 7

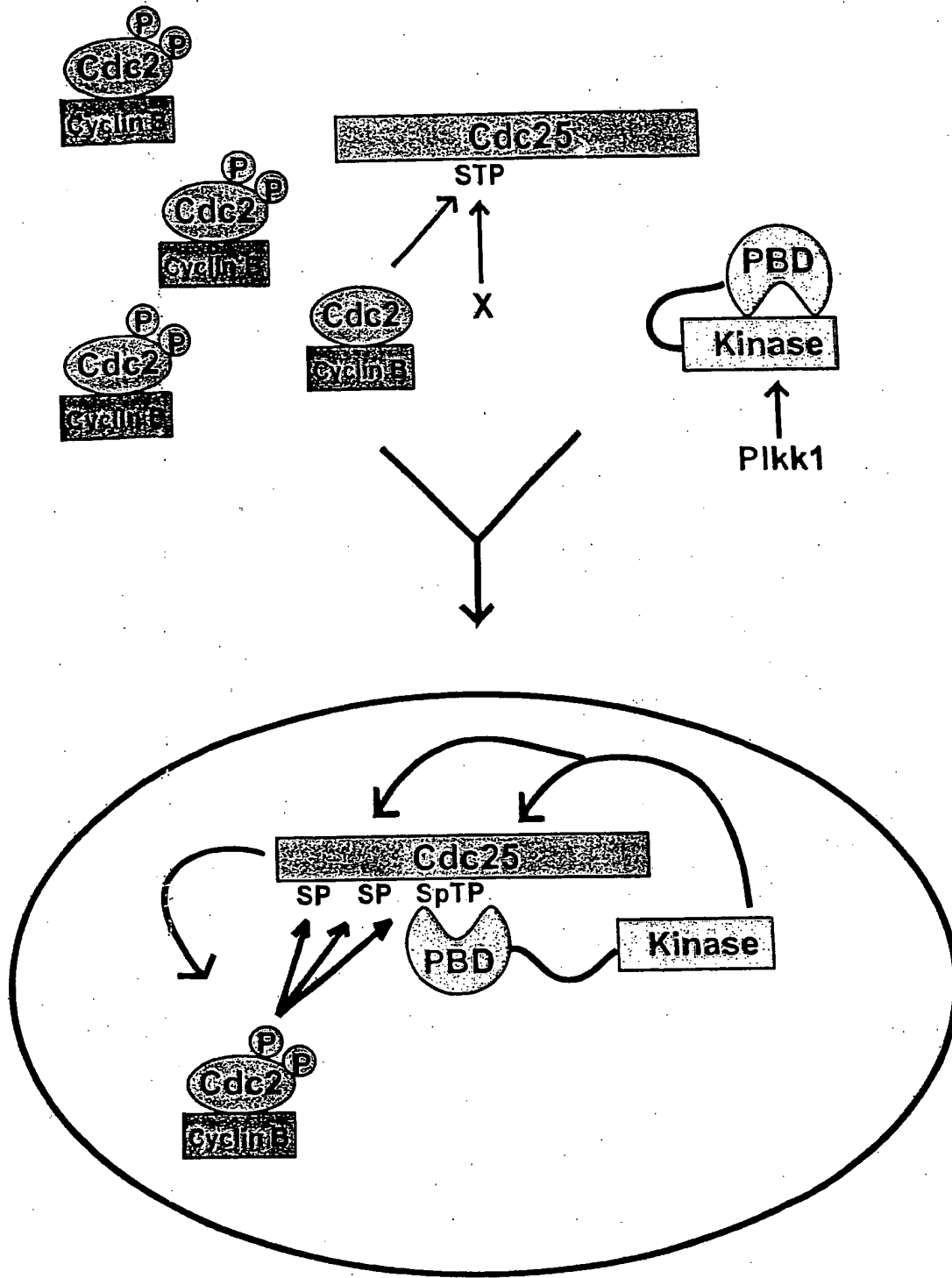


Figure 8

A

pT-1 serine analogues abolish PIK1 PBD: peptide binding in solution

Peptide name	Peptide sequence	K_d
PoloBoxide-optimal	MAGPMQ-S-pT-P-LNGAKK	280 ± 27 nM
PoloBoxide-7A	MAGPMQ-A-pT-P-LNGAYKK	N.D.B.
PoloBoxide-7G	MAGPMQ-G-pT-P-LNGAYKK	N.D.B.
PoloBoxide-7C	MAGPMQ-C-pT-P-LNGAYKK	N.D.B.
PoloBoxide-7T	MAGPMQ-T-pT-P-LNGAYKK	N.D.B.

B

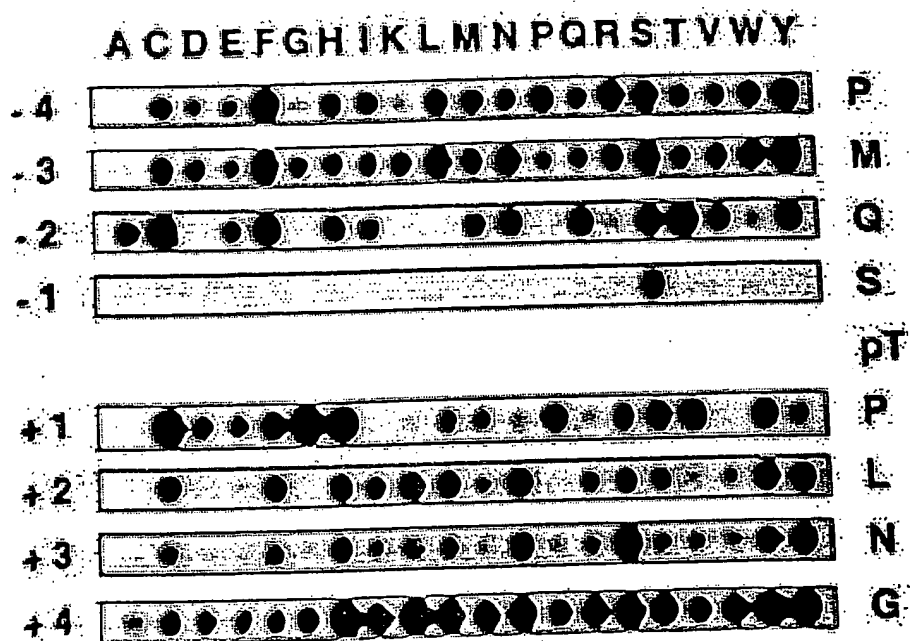


Figure 9

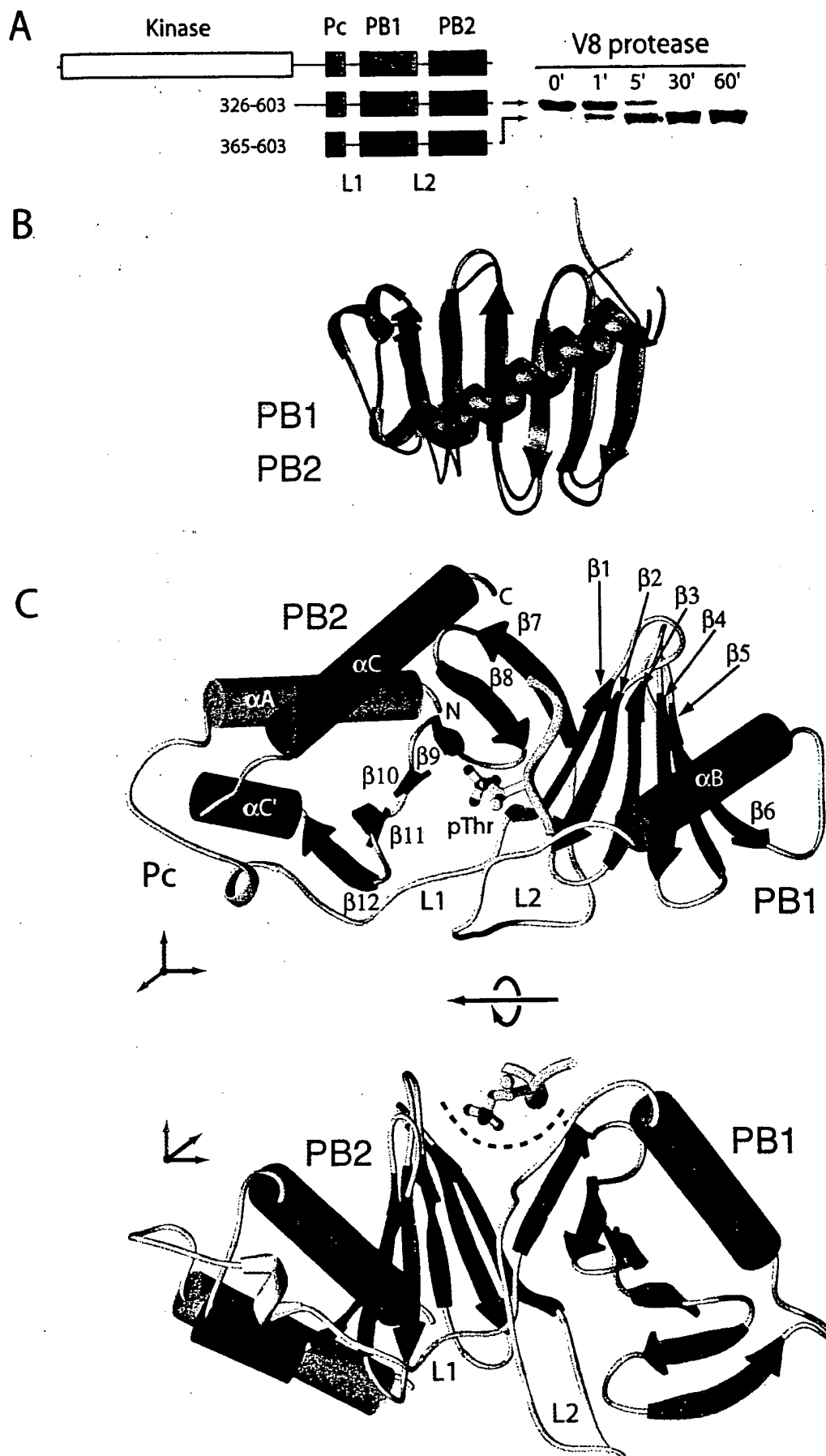
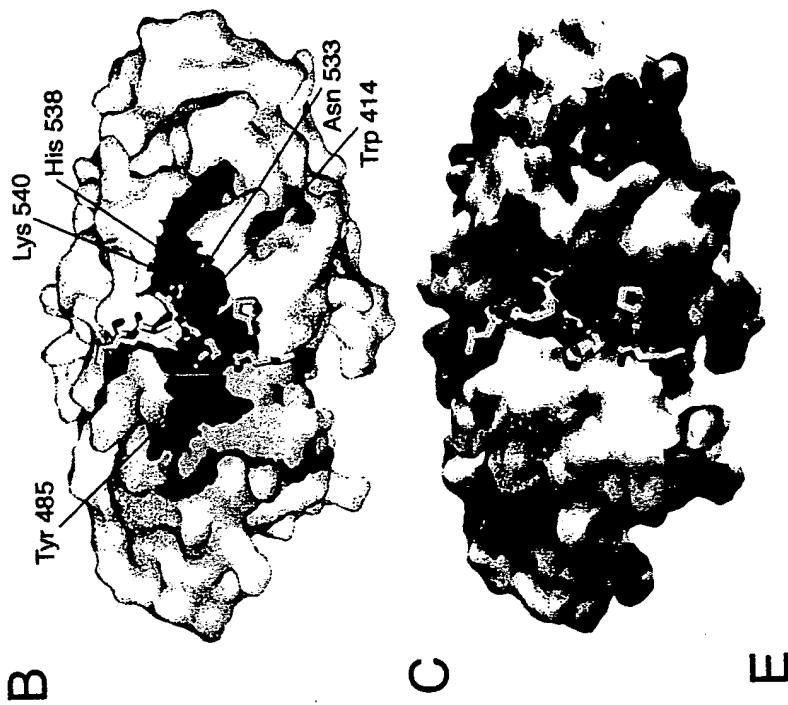


Figure 10



E

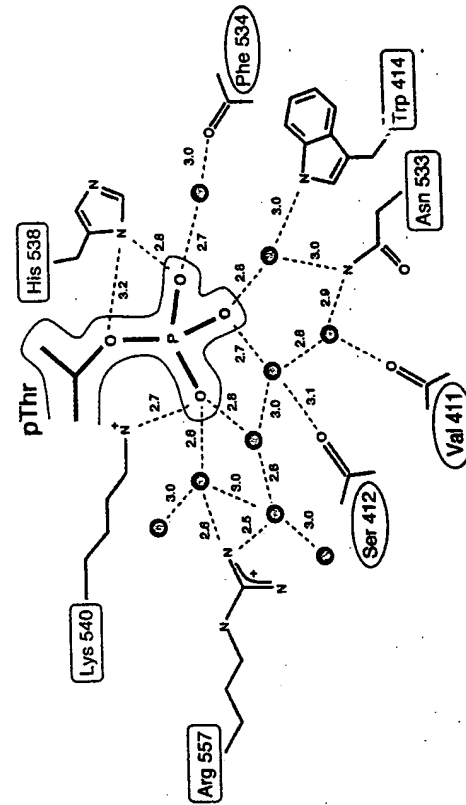
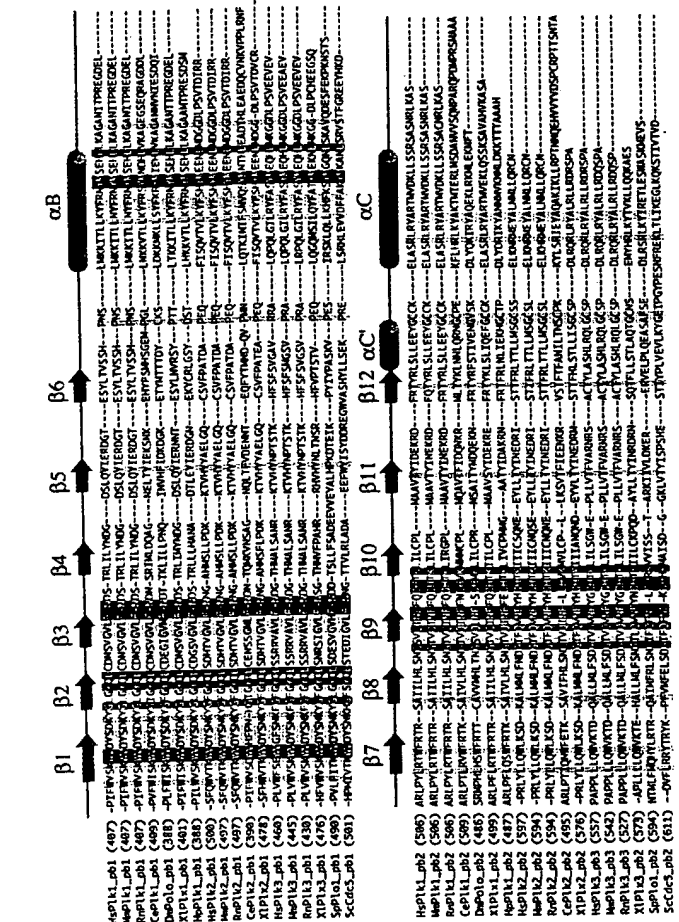
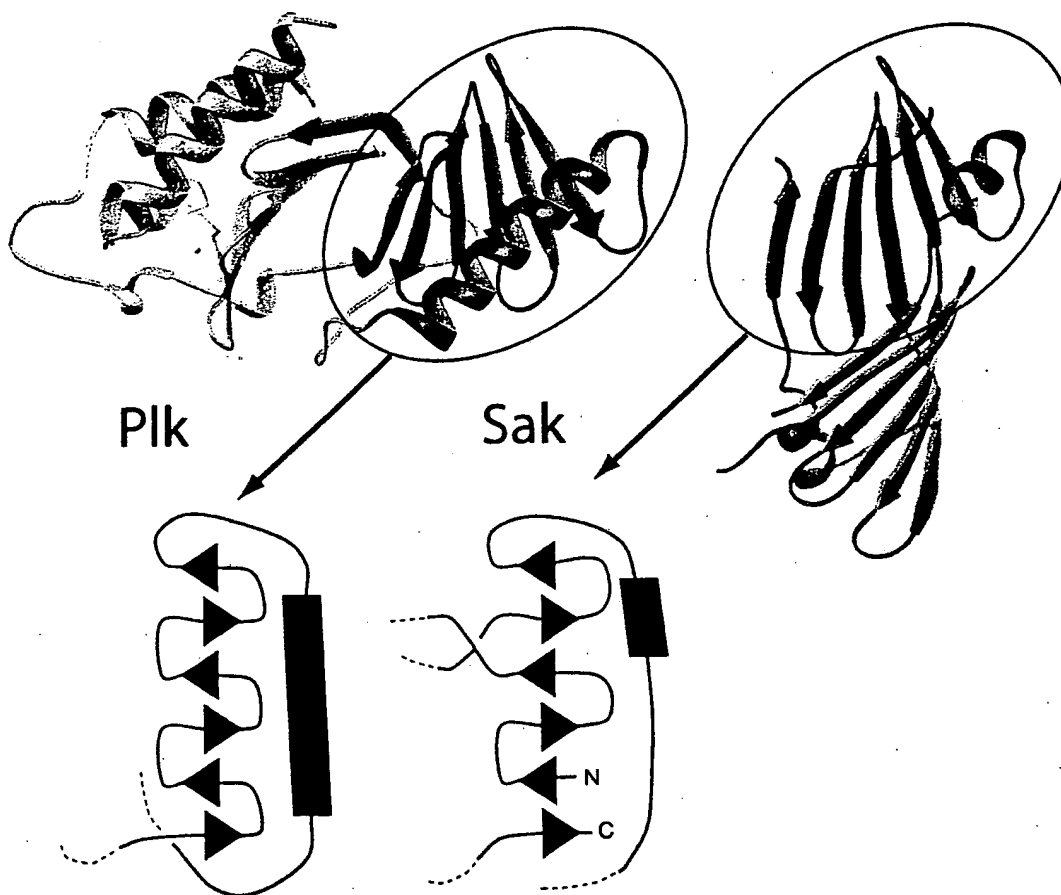


Figure 11



D

A



B

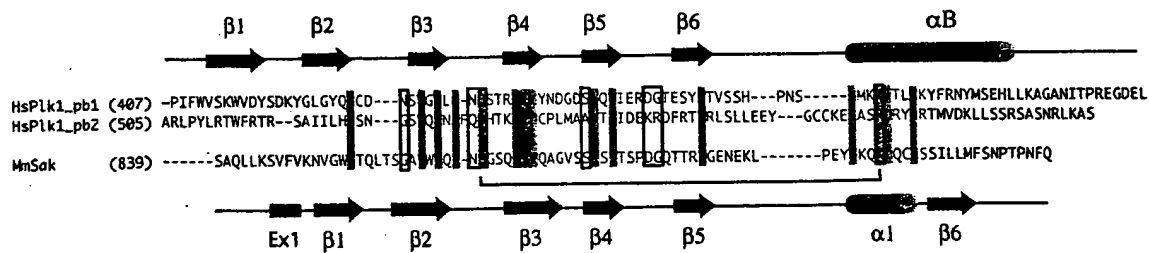


Figure 12

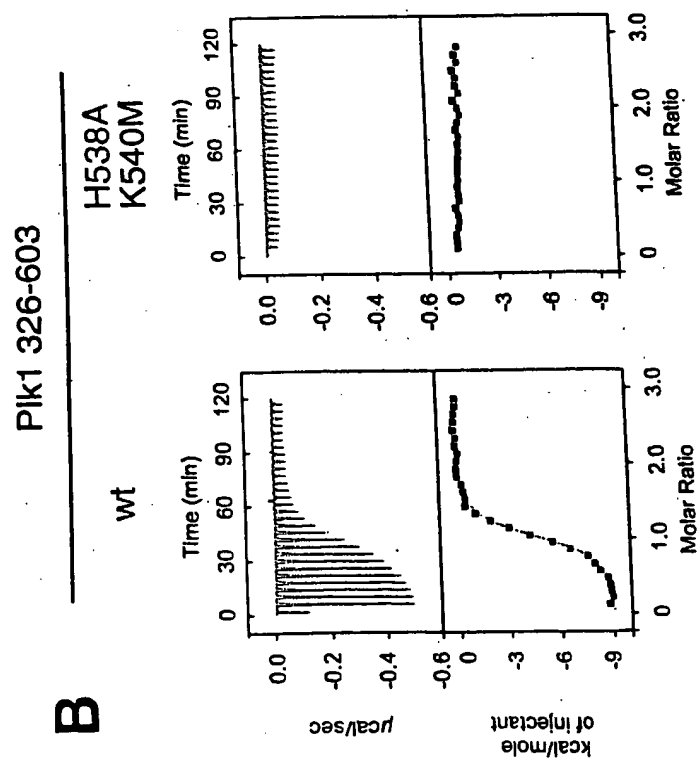
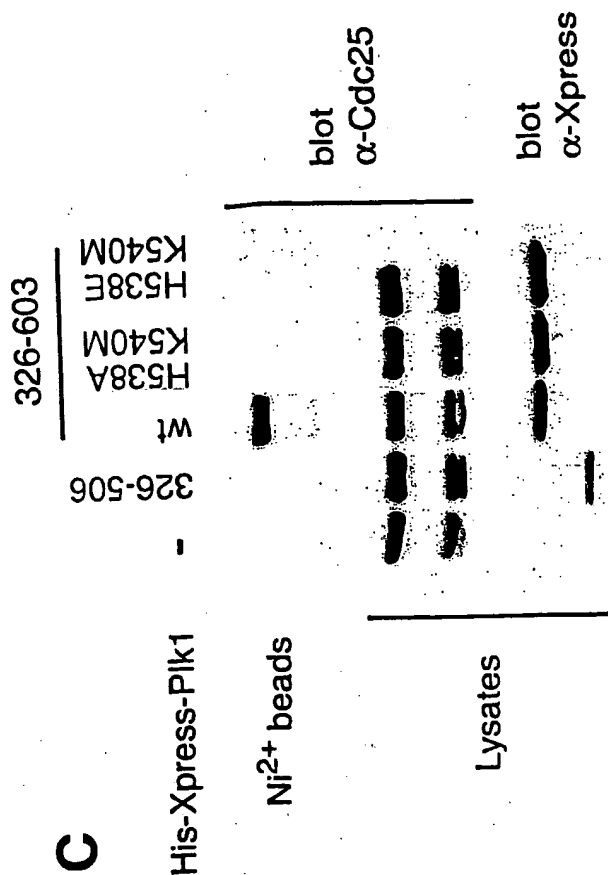


Figure 13

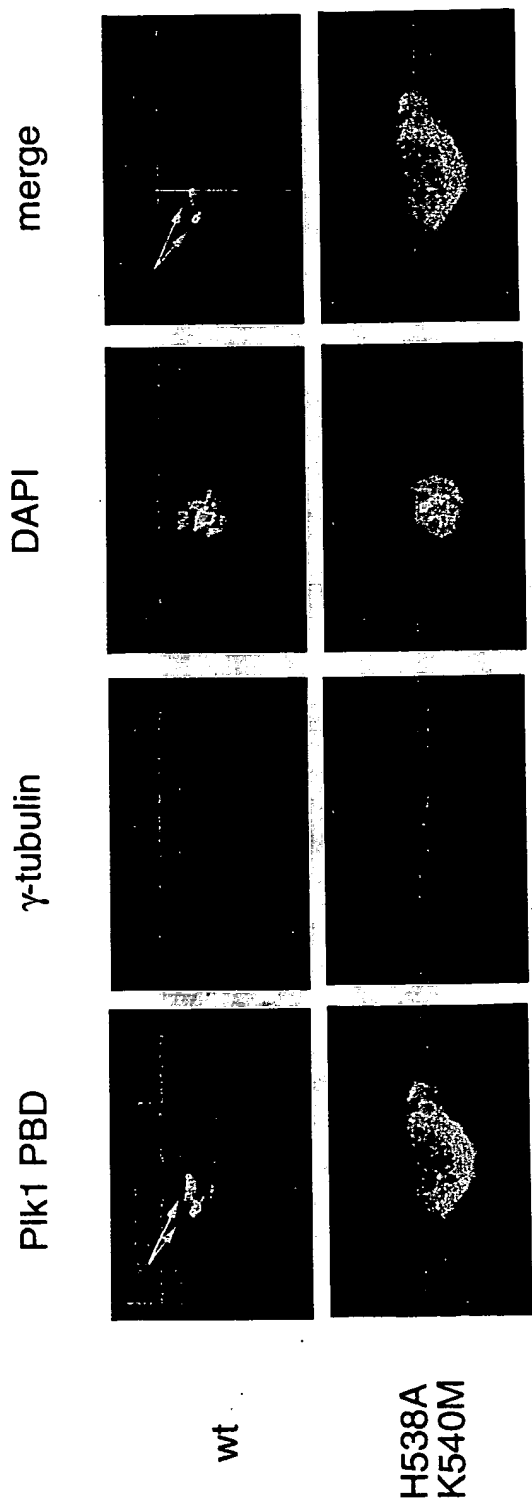


Figure 14

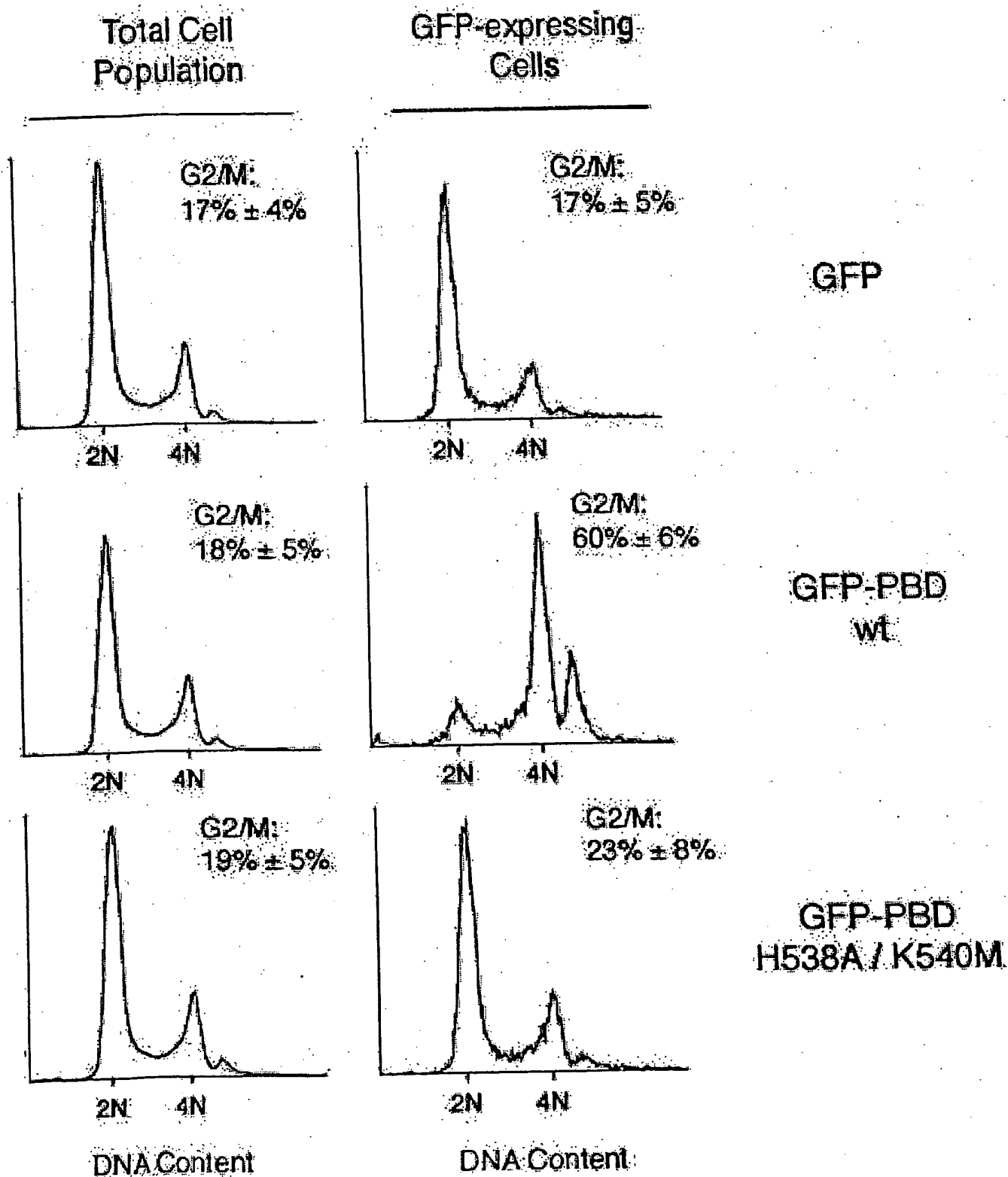


Figure 15

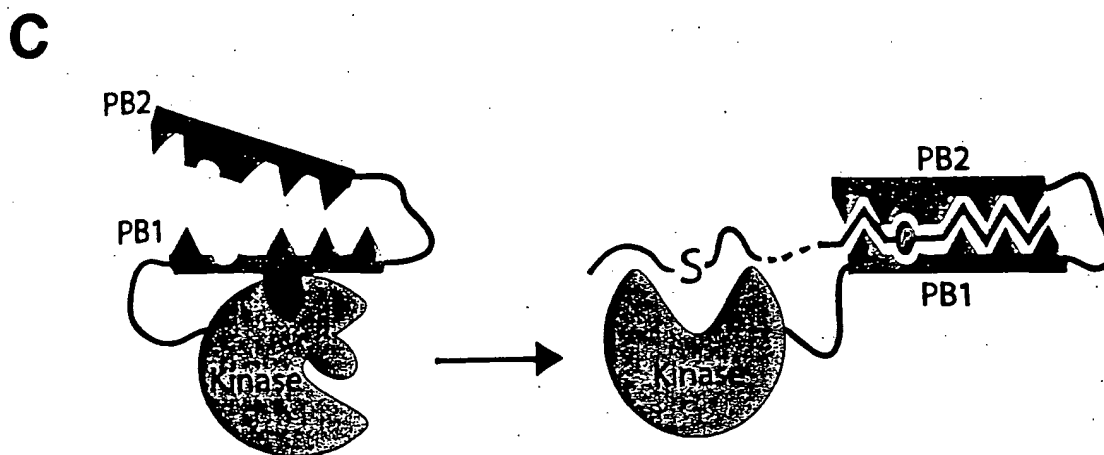
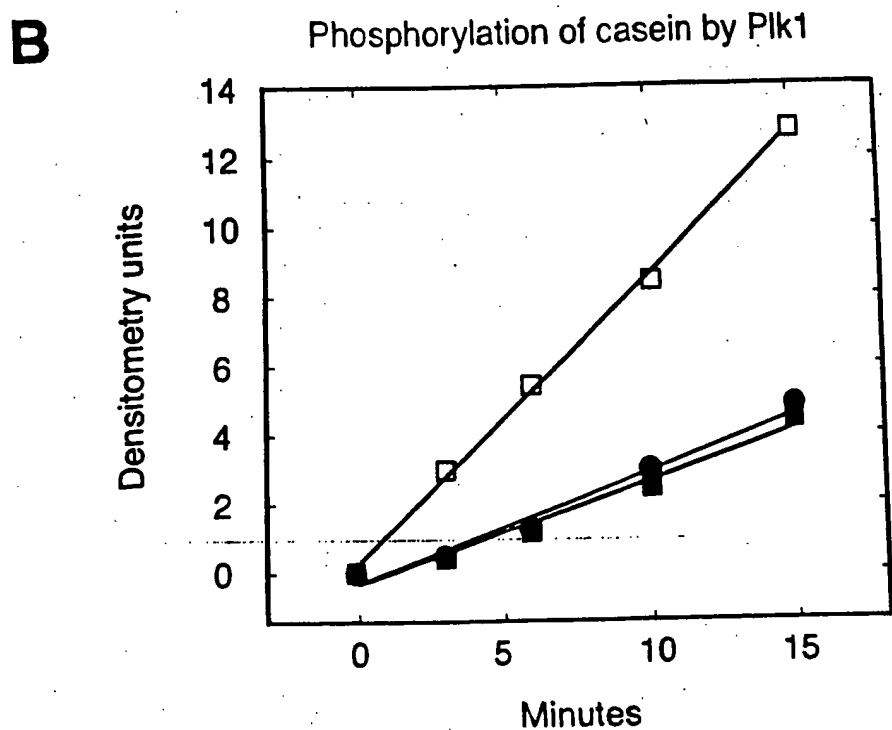
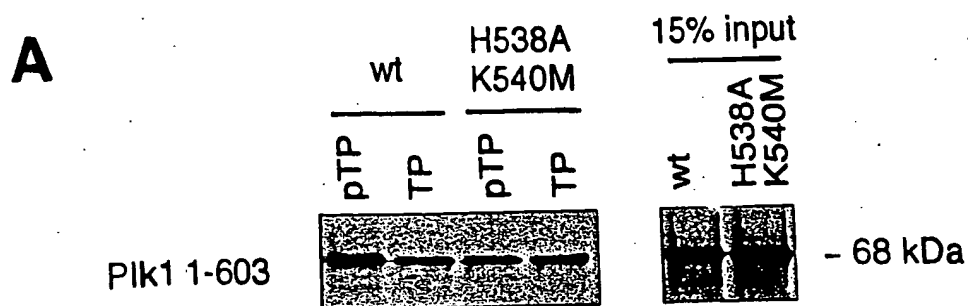
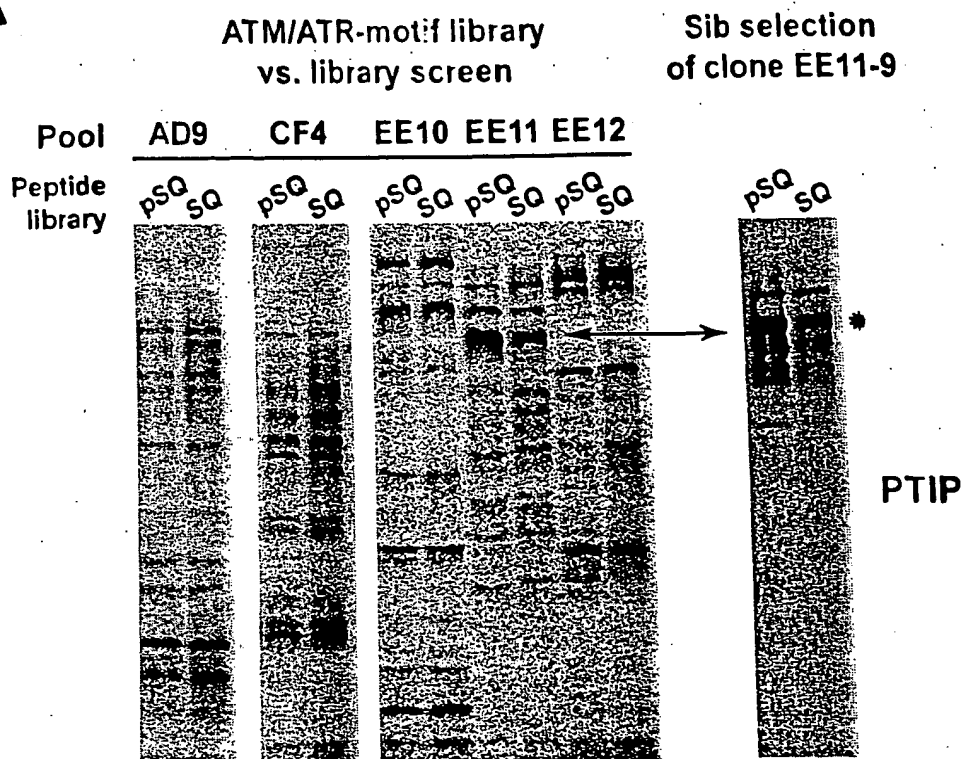


Figure 16

A



B

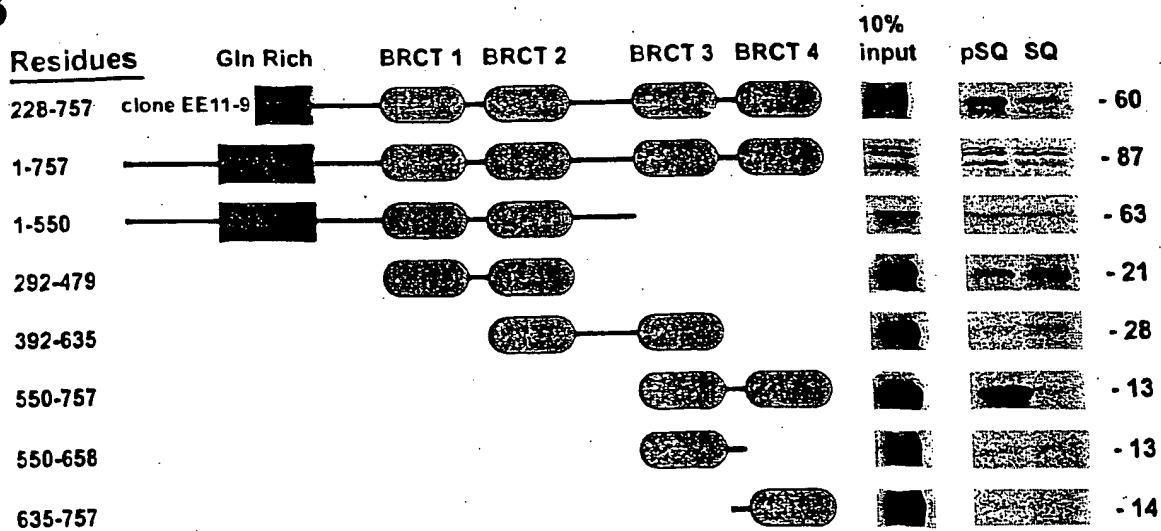


Figure 17

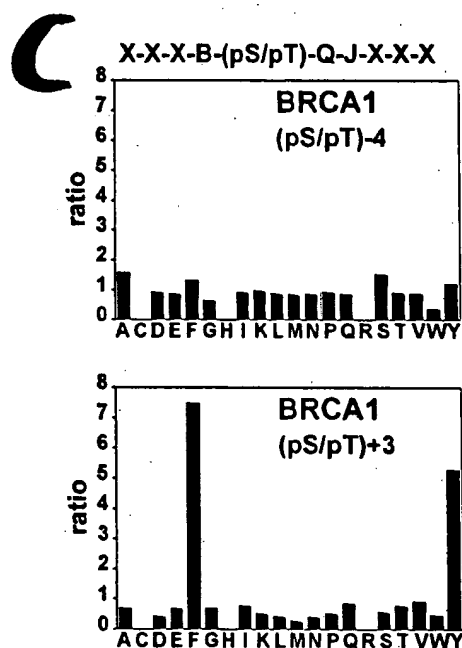
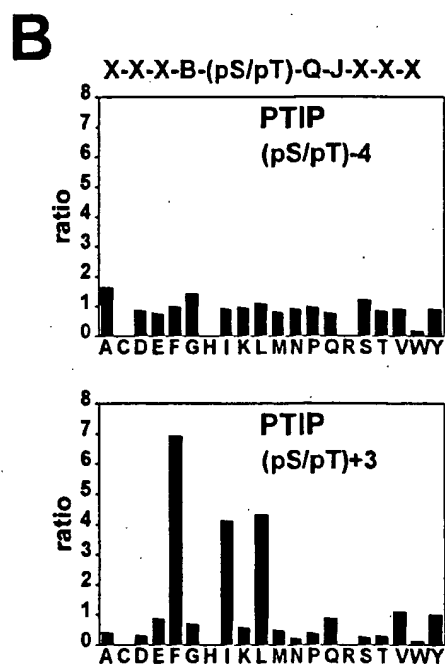
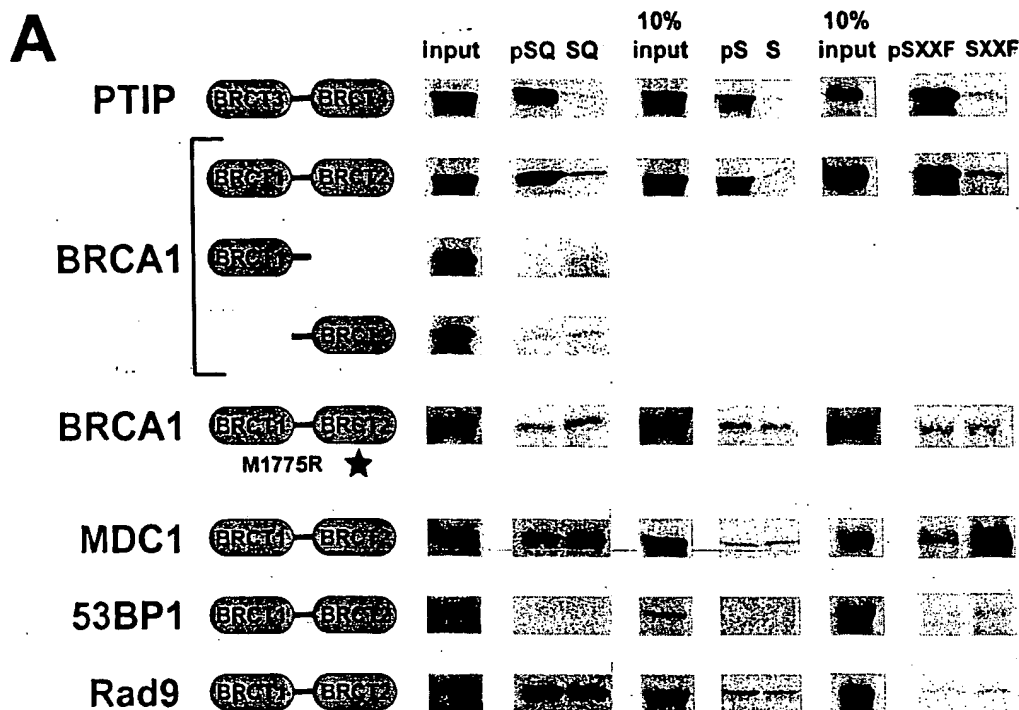
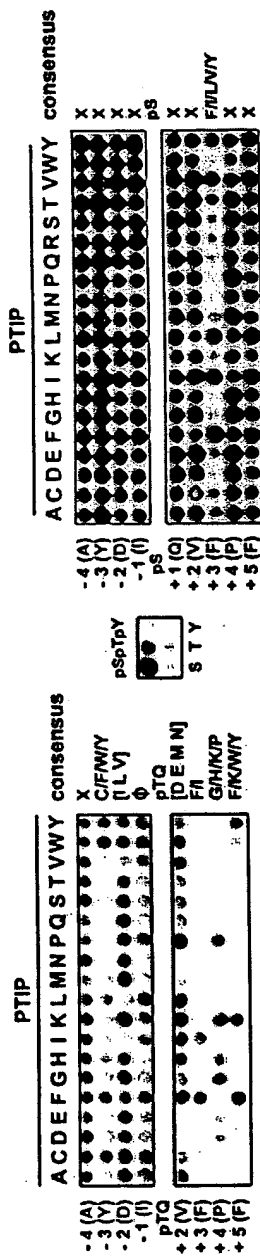


Figure 18A, 18B, 18C

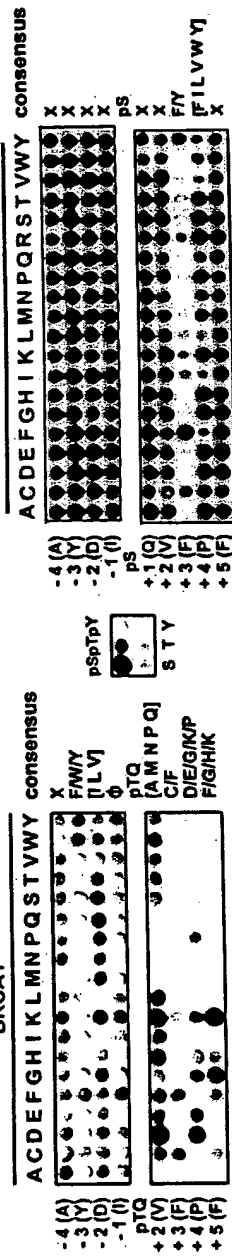
18F

18D

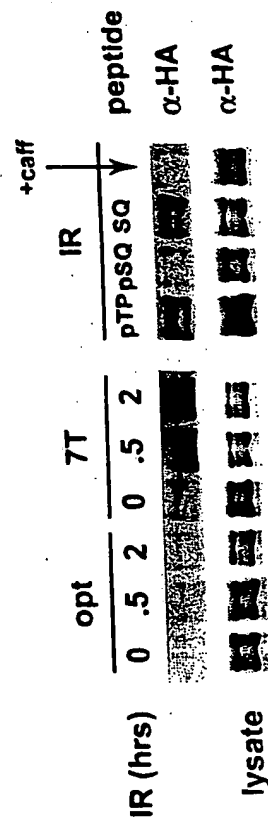
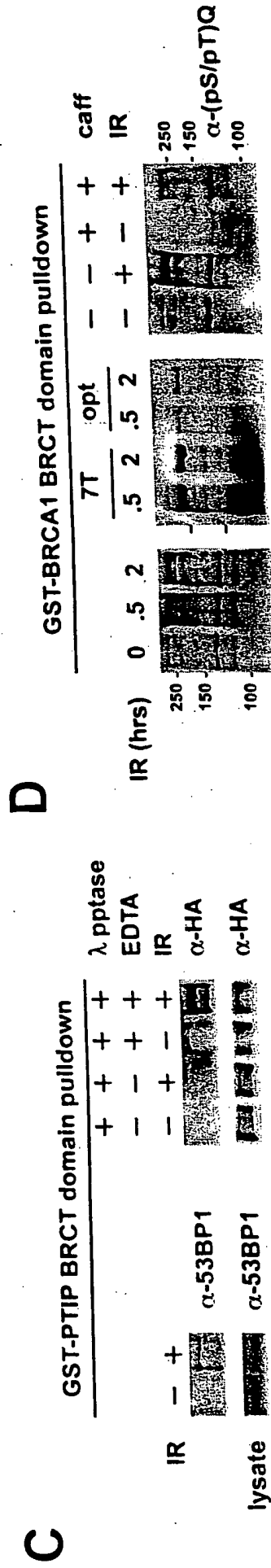
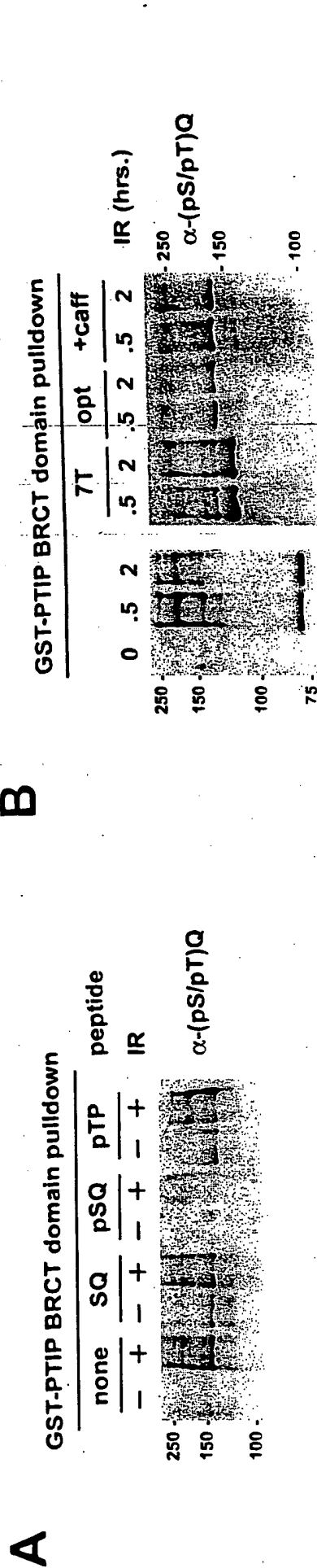


18G

18E



Figures 18D, 18E, 18F, 18G

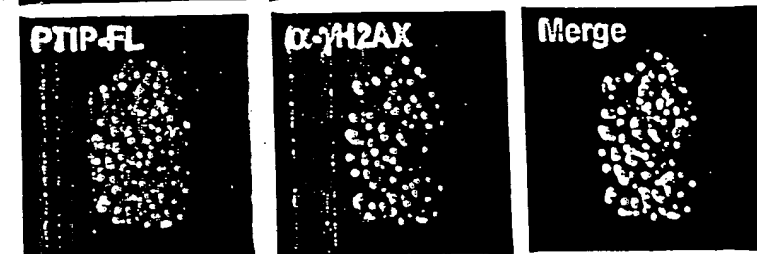
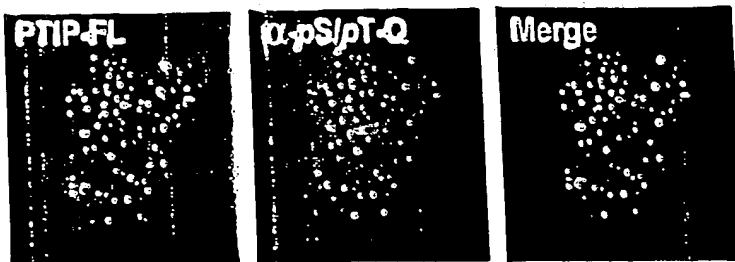
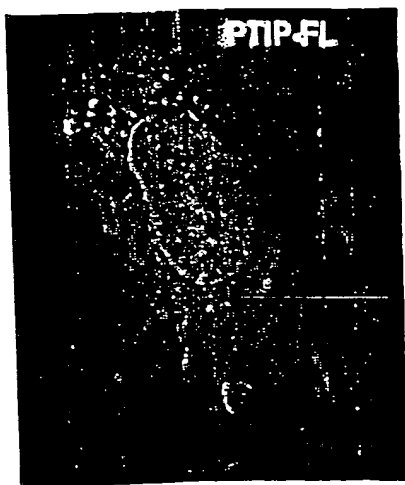


Figures 19A, 19B, 19C, 19D

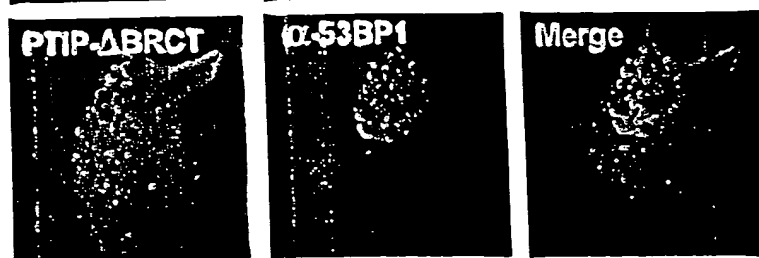
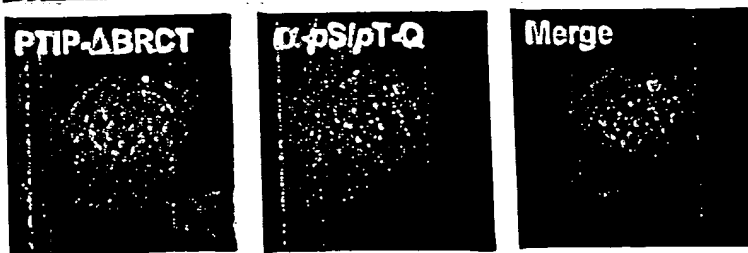
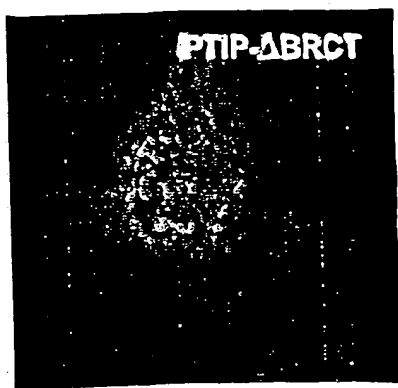
— IR

+ 10 Gy IR

A



B



C

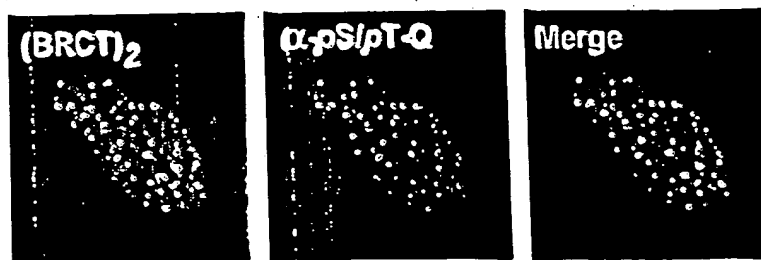
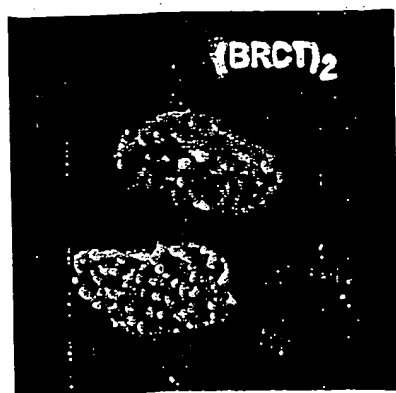


Figure '20

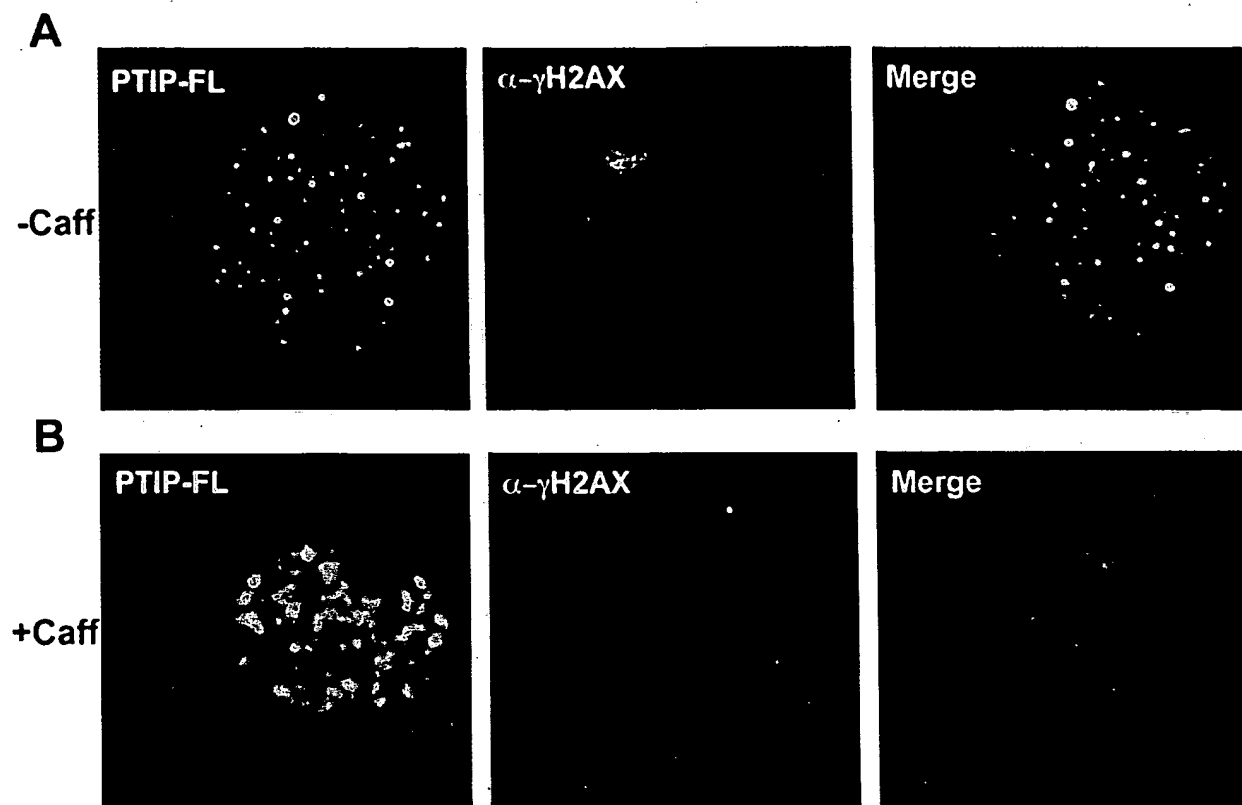


Figure 21A, 21B

Figure 22
PTIP

>gi|21707458|gb|AAH33781.1| PAX transcription activation domain interacting protein 1 like
[Homo sapiens]
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KKMVPPhRALHFPVAFPPGGKPCSQHIISVTGFVDSRDDLKLMAYLAGAKYTGylCRSNTVLIC
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VQQYIKKLYILGGEVAESAQKCTHLIASKVTRTVKFLTAISVVKHIVTPEWLEECFRCQKFIDEQNYI
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MEHKQNSSLSEIILISCENDLHLCREYFARGIDVHNAEVLTVGLTQTLDYESYKFN

Title: PRODUCTS AND PROCESSES FOR MODULATING PEPTIDE-PEPTIDE BINDING DOMAIN INTERACTIONS

Applicants: Michael B. Yaffe et al.

Filing Date: November 14, 2003

Serial No: Not Yet Assigned

Customer No: 21559

[illegible]

Figure 24
Brca1

>gi|30039659|gb|AAP12647.1| breast cancer 1, early onset [Homo sapiens]
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SVGDQELLQITPQGTTRDEISLDSAKKAACEFSETDVTNTEHHQPSNNDLNTTEKRAAERHPEKY
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SYLPRQDLEGTPYLESGISLFSDDPESDPSEDRAPEARSARVGNIPSSSALKVPQLKVAESAQSPA
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Figure 25

>(gi|30039658:2223-2302, 10541-10594, 19804-19881, 21381-21469, 22076-22215, 26456-26561, 29046-29091, 30413-30489, 31479-34904, 35307-35395, 43771-43942, 49733-49859, 51830-52020, 55137-55447, 58682-58769, 62426-62503, 63004-63044, 69242-69325, 75264-75318, 77187-77260, 78678-78738, 80580-80704) Homo sapiens breast cancer 1, early onset (BRCA1) gene, complete cds

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GCAATATTAATGAAGTAGGTTCCAGTACTAATGAAGTGGGCTCCAGTATTAATGAAATAGGTT
CCAGTGATGAAAACATTCAAGCAGAACTAGGTAGAAACAGAGGGCCAAAATTGAATGCTATG
CTTAGATTAGGGGTTTTGCAACCTGAGGTCTATAAACAAAGTCTTCCTGGAAGTAATTGTAAG
CATCCTGAAATAAAAAAGCAAGAATATGAAGAAGTAGTTGAGACTGTTAATACAGATTTCTCT
CCATATCTGATTTAGATAACTTAGAACAGCCTATGGGAAGTAGTCATGCATCTCAGGTTTGT
TCTGAGACACCTGATGACCTGTTAGATGATGGTGAAATAAAGGAAGATACTAGTTTTGCTGA
AAATGACATTAAGGAAAAGTTCTGCTGTTTTTAGCAAAAGCGTCCAGAAAGGAGAGCTTAGCA
GGAGTCCTAGCCCTTTACCCATACACATTTGGCTCAGGGTTACCGAAGAGGGGGCCAAAGAA
ATTAGAGTCCTCAGAAGAGAACTTATCTAGTGAGGATGAAGAGCTTCCCTGCTTCCAACACT
TGTTATTTGGTAAAGTAAACAATATACCTTCTCAGTCTACTAGGCATAGCACCGTTGCTACCG
AGTGTCTGTCTAAGAACACAGAGGAGAATTTATTATCATTGAAGAATAGCTTAAATGACTGCA
GTAACCAGGTAATATTGGCAAAGGCATCTCAGGAACATCACCTTAGTGAGGAAACAAAATGT
TCTGCTAGCTTGTTTTCTTCACAGTGACGTGAATTGGAAGACTTGACTGCAAATACAAACACC
CAGGATCCTTTCTTGATTGGTTCTTCCAAACAAATGAGGCATCAGTCTGAAAGGCCAGGGAGT
TGGTCTGAGTGACAAGGAATTGGTTTCAGATGATGAAGAAAGAGGAACGGGCTTGGAAAGAA
AATAATCAAGAAGAGCAAAGCATGGATTCAAACCTTAGGTGAAGCAGCATCTGGGTGTGAGAG
TGAAACAAGCGTCTCTGAAGACTGCTCAGGGCTATCCTCTCAGAGTGACATTTTAACCACTC
AGCAGAGGGATACCATGCAACATAACCTGATAAAGCTCCAGCAGGAAATGGCTGAACTAGA
AGCTGTGTTAGAACAGCATGGGAGCCAGCCTTCTAACAGCTACCCTTCCATCATAAGTGACT
CTTCTGCCCTTGAGGACCTGCGAAATCCAGAACAAAGCACATCAGAAAAAGCAGTATTAAT
TCACAGAAAAGTAGTGAATACCCTATAAGCCAGAATCCAGAAGGCCTTTCTGCTGACAAGTT
TGAGGTGTCTGCAGATAGTTCTACCAGTAAAAATAAAGAACCAGGAGTGGAAGGTCATCCC
CTTCTAAATGCCCATCATTAGATGATAGGTGGTACATGCACAGTTGCTCTGGGAGTCTTCAG
AATAGAACTACCCATCTCAAGAGGAGCTCATTAAAGTTGTTGATGTGGAGGAGCAACAGCT
GGAAGAGTCTGGGCCACACGATTTGACGGAAACATCTTACTTGCCAAGGCAAGATCTAGAG
GGAACCCCTTACCTGGAATCTGGAATCAGCCTCTTCTCTGATGACCCTGAATCTGATCCTTC
TGAAGACAGAGCCCCAGAGTCAGCTCGTGTTGGCAACATACCATCTTCAACCTCTGCATTGA
AAGTTCCCCAATTGAAAGTTGCAGAATCTGCCCAGAGTCCAGCTGCTGCTCATACTACTGAT
ACTGCTGGGTATAATGCAATGGAAGAAAGTGTGAGCAGGGAGAAGCCAGAATTGACAGCTT
CAACAGAAAGGGTCAACAAAAGAATGTCCATGGTGGTGTCTGGCCTGACCCCAAGAAGATTT
ATGCTCGTGTAAGTTTGCCAGAAAACACCACATCACTTTAACTAATCTAATTACTGAAGAG
ACTACTCATGTTGTTATGAAAACAGATGCTGAGTTTGTGTGTGAACGGACACTGAAATATTTT
CTAGGAATTGCGGGAGGAAAATGGGTAGTTAGCTATTTCTGGGTGACCCAGTCTATTAAGA
AAGAAAAATGCTGAATGAGCATGATTTTGAAGTCAGAGGAGATGTGGTCAATGGAAGAAACC
ACCAAGGTCCAAAGCGAGCAAGAGAATCCCAGGACAGAAAGATCTTCAGGGGGGCTAGAAAT
CTGTTGCTATGGGCCCTTACCAACATGCCACAGATCAACTGGAATGGATGGTACAGCTGT
GTGGTGCTTCTGTGGTGAAGGAGCTTTCATCATTACCCCTTGGCACAGGTGTCCACCCAATT
GTGGTTGTGCAGCCAGATGCCTGGACAGAGGACAATGGCTTCCATGCAATTGGGCAGATGT
GTGAGGCACCTGTGGTGACCCGAGAGTGGGTGTTGGACAGTGTAGCACTCTACCAGTGCCA
GGAGCTGGACACCTACCTGATACCCAGATCCCCACAGCCACTACTGA

Figure 25 (continued)

Figure 26
MDC1

>gi|7661966|ref|NP_055456.1| MDC1 mediator of DNA damage checkpoint 1; nuclear factor with BRCT domains protein 1; Em:AB023051.5 [Homo sapiens]
MEDTQAIDWDVEEEEETEQQSSESLRCNVEPVGRLHIFSGAHGPEKDFPLHLGKNVVGRiIPDCS
VALPFPISISKQHAIEILAWDKAPILRDCGSLNGTQILRPPKVLSPGVSHRLRDQELILFADLLCQY
HRLDVSLPFVSRGPLTVEETPRVQGETQPQRLLAEDSEEEVDFLSERRMVKKSRRTTSSSVIVPE
SDEEGHSPVLGGLGPPFAFNLSDDTVEEGQQPATEEASSAARRGATVEAKQSEAEVVTEIQLE
KDQPLVKERDNDTKVKRGAGNGVVPAGVILERSQPPGEDSDTDVDDDSRPPGRPAEVHLERAQ
PFGFIDSDTDAEEERIPATPVVIMKKRKIFHGVGTRGPGAPGLAHLQESQAGSDTDVEEGKAPQ
AVPLEKSQASMVINSDDTDEEEVSAALTLAHLKESQPAIWNRAEEDMPQRVVLLQRSQTTER
DSDTDVEEEELPVENREAVLKDHTKIRALVRAHSEKDQPPFGDSDDSVEADKSSPGIHLERSQA
STTVDTINTQVEKEVPPGSAIMHIKKHQVSVEGTNQTQDVKAVGGPAKLLVVSLEEAWPLHGDCET
DAEEGTSLTASVVADVRSKSQLPAEGDAGAEWAAAVLKQERAHEVGAQGGPPVAQVEQDLPISR
ENLTDLVVDTDTLGESTQPQREGAQVPTGREREQHVGGTKDSEDNYGDSDDLQATQCFLN
QGLEAVQSMEDPTQAFMLTPPQELGPSHCSFQTTGTLDPEWEVLATQPFCLRESEDSETQPF
DTHLEAYGPCLSPRAIPGDQHPESPVHTEPMGIQGRGRQTVDKVMGIPKETAERVGPERGPLE
RETEKLLPERQTDVTGEEELTKGKQDREQKQLLARDTQRQESDKNGESASPERDRESLKVEIET
SEEIQEKQVQKQTLPSKAFEREVERPVANRECDPAELEEKVPKVILERDTQRGEPEGGSQDQKG
QASSPTPEPGVGAGDLPGPTSAPVPSGSQSGGRGSPVSPRRHQKGLLNCKMPPAEKASRIRAA
EKVSRGDQESPDACLPPAVPEAPAPPQKPLNSQSQKHLAPPLLSPLLPSIKPTVRKTRQDGSQ
EAPLPLSSELEPFHPKPKIRTRKSSRMTFPATSAPEPHSTSTAQPVTTPKPTSQATRSRTNR
SSVKTPEPVVPTAPELQSTSTDQPVTSPTSQVTRGRKSRSSVKTPETVVPTALELQSTSTD
RPVTSEPTSQATRGRKNRSSVKTPEPVVPTAPELQSTSTDQPVTSPTYQATRGRKNRSSVKT
PEPVVPTAPELRPSTSTDQPVTPKPTSRTTTRSRNMSSVKTPETVVPTAPELQISTSTDQPVTPK
PTSRTTTRSRNMSSVKNPESTVPIAPELPPSTSTEQPVTPPTSRTATRGRKNRSSGKTPETLVPT
APKLEPSTSTDQPVTPPTSQATRGRKNRSSVKTPETVVPTAPELQSTSTDQPVTPPTSQAT
RGRTDRSSVKTPETVVPTAPELQASASTDQPVTSPTSRTTTRGRKNRSSVKTPETVVPAAPQLQ
PPTSTDQPVTPPTSRTATRGRKNRSSVKTPETVVPTAPELQSTSTDQPVTPPTSRTATRCRTNR
SSVKTPEPVVPTAPEPHPTTSTDQPVTPKLTSTRATRRKTNRSSVKTPETVVPAASDLEPFTPTDQ
SVTPEAIAQGGQSKTLRSSTVRAMPVPTTPEFQSPVTTDQPISEPITQPSCIQRQAAGNPGSL
AAPIDHKPCSAPLEPKSQASRNQRWGAVRAAESLTAIPEPASQQLLETPIHASQIQKVEPAGRSR
FTPQLQPKASQSRKSLATMDSPPHQKQPPQGEVSQKTVIIKEEEDTAEKPGKEEDVVTPKPG
KRKRDQAEENRIPSRSLRRTKLNQESTAPKVLFTGVVDARGERAVLALGGLAGSAAEASHL
VTDRIIRRTVKFLCALGRGIPILSLDWLHQSRAKAGFFLPDEYVVDPEQEKNFGFSLQDALSRAR
ERRLLEGYEIYVTPGVQPPPPQMGEIISCCGGTYLPSMPSYKQQRVVITCPQDFPHCSIPLRVG
LPLLSPEFLLTGVLKQEAKEAFVLSPLEMSST

Figure 27

>gi|7661965:14-6283 Homo sapiens mediator of DNA damage checkpoint 1 (MDC1), mRNA
ATGGAGGACACCCAGGCTATTGACTGGGATGTTGAAGAAGAGGAGGAGACAGAGCAATCCA
GTGAATCCTTGAGGTGTAACGTGGAGCCAGTAGGGCGGCTACATATCTTTAGTGGTGCCCA
TGGACCAGAAAAAGATTTCCTACTACACCTCGGGAAGAATGTGGTAGGCCGAATGCCTGAC
TGCTCTGTGGCCCTGCCCTTTCCATCTATCTCAAACAACATCAGAGATTGAAATCTTAGC
CTGGGACAAGGCACCTATCCTCCGAGACTGTGGGAGCCTTAATGGTACTCAAATCCTGAGA
CCTCCTAAGGTTTTGAGCCCTGGGGTGAGTCACCGTCTGAGGGACCAGGAATTGATTCTCTT
TGCTGACTTGCTCTGCCAGTACCATCGCCTGGATGTCTCTCTGCCCTTTGTCTCCCGGGGC
CCTCTGACAGTAGAAGAGACACCCAGAGTACAGGGAGAACTCAACCCCAGAGGCTTCTGT
TGGCTGAGGACTCGGAGGAGGAAGTAGATTTTCTTTCTGAAAGGCGTATGGTAAAAAATCA
AGGACCACATCTTCTCTGTGATAGTTCCAGAGAGTGATGAAGAGGGGCATTCCCCGGTCC
TGGGCGGCCTTGGGCCGCCTTTTGCCTTCAATTTGAACAGTGACACAGATGTGGAAGAAGG
TCAGCAACCAGCCACAGAGGAGGCCTCCTCAGCTGCCAGAAGAGGTGCCACTGTAGAGGC
AAAGCAGTCTGAAGCTGAAGTTGTAAGTGAATCCAGCTTGAAGAGGATCAGCCTTTAGTGA
AGGAGAGGGACAATGATACAAAAGTCAAGAGGGGTGCAGGGAATGGGGTGGTTCCAGCTG
GGGTGATTCTGGAGAGGAGCCAACCTCCTGGAGAGGACAGTGACACAGATGTGGATGATGA
CAGCAGGCCTCCTGGAAGGCCAGCTGAGGTCCATTTGGAAGGGCTCAGCCTTTTGGCTTC
ATCGACAGCGACACTGATGCGGAAGAAGAGAGGATCCCAGCAACCCCAGTTGTCTTCTTA
TGAAGAAGAGGAAGATCTTCCATGGAGTAGGTACAAGGGGTCTGGAGCACCAGGCCTGG
CCCATCTGCAGGAGAGCCAGGCTGGTAGTGATACAGATGTGGAAGAAGGCAAGGCCCCAC
AGGCTGTCCCTCTGGAGAAAAGCCAAGCTTCCATGGTTATCAACAGCGATACAGATGACGA
GGAAGAAGTCTCAGCAGCGCTGACTTTGGCACATCTGAAAGAGAGCCAGCCTGCTATATGG
AACAGAGATGCAGAAGAGGACATGCCCCAACGTGTGGTCTTCTGCAGCGAAGCCAAACCA
CCTCTGAGAGAGACAGTGACACAGACGTGGAGGAGGAAGAGCTCCCAGTGGAATAAGAG
AAGCTGTCTCAAGGATCACACAAAGATTAGAGCCCTTGTAGAGCACATTGAGAAAAGGAC
CAACCTCCTTTTGGGGACAGTGATGACAGTGTTGAAGCAGATAAGAGCTCACCTGGGATCC
ACCTGGAGAGAAGCCAAGCCTCCACCACAGTGGACATCAACACACAAGTGGAGAAGGAAGT
CCCGCCAGGGTCAGCCATTATGCATATAAAGAAGCATCAGGTGTCTGTGGAGGGGACAAAT
CAAACAGATGTGAAAGCAGTTGGGGGACCAGCAAAGCTGCTTGTGGTATCTCTAGAGGAAG
CCTGGCCTCTGCATGGGGACTGTGAAACAGATGCAGAGGAGGGCACCTCCCTAACAGCCTC
AGTAGTTGCAGATGTAAGAAAGAGCCAGCTTCCAGCAGAAGGGGATGCTGGGGCAGAGTG
GGCTGCAGCTGTTCTTAAGCAGGAGAGAGCTCATGAGGTGGGGGCCAGGGTGGGGCCACC
TGTGGCACAAGTGGAGCAGGACCTCCCTATCTCAAGAGAGAACCTCACAGATCTGGTGGTG
GACACAGACACTCTAGGGGAATCCACCCAGCCACAGAGAGAGGGAGCCAGGTCCCCACA
GGAAGGGAGAGAGAACAACATGTGGGTGGGACCAAGGACTCTGAAGACAACATATGGTGATT
CTGAAGATCTGGACCTACAAGCTACCCAGTGCTTTCTGGAGAATCAGGGCCTGGAAGCAGT
CCAGAGCATGGAGGATGAACCTACCCAGGCCTTCATGTTGACTCCACCCCAAGAGCTTGGC
CCTTCCCATTCAGCTTCCAGACAACAGGTACCCTAGATGAACCATGGGAGGTCTGGGCTA
CACAGCCATTCTGTCTGAGAGAGTCTGAGGACTCTGAGACCCAGCCTTTTGACACGCACCTT
GAGGCCTATGGACCTTGCCTGTCTCCACCTAGGGCAATACCAGGAGACCAACATCCAGAGA
GCCCAGTTCACACAGAGCCAATGGGGATTCAAGGCAGAGGGAGGCAGACTGTGGATAAAGT
CATGGGTATACCAAAAGAAACAGCAGAGAGGGTGGGCCCTGAGAGAGGGCCATTGGAGAG
AGAACTGAGAACTGCTACCAGAAAGACAGACAGATGTGACAGGAGAGGAAGAATTAACC
AAGGGGAAACAGGACAGAGAAACAAAACAGTTGTTAGCTAGAGACACCCAGAGACAAGAAT
CTGACAAAAATGGGGAAAGTGCAAGTCTGAAAGAGATAGGGAGAGTTTGAAGGTAGAAATT
GAGACATCTGAGGAAATACAAGAGAAACAAGTACAGAAGCAGACCCTTCCAAGCAAAGCATT
TGAGAGAGAAGTAGAGAGACCAGTAGCAAACAGAGAGTGCGATCCAGCCGAGTTAGAAGAG
AAGGTGCCCAAAGTGATCCTGGAGAGAGATACACAGAGAGGGGAGCCAGAGGGAGGGAGC
CAGGACCAGAAAGGGCAGGCCTCCAGCCCAACACAGAGCCTGGGGTGGGGCGGGGGA
CCTTCCGGGACCTACCTCAGCCCCGTACCTTCTGGGAGCCAGTCAGGTGGAAGGGGATC
CCCAGTGAGCCCAAGGACCTCAGGATCAGAAAGGCCTCCTGAATTGCAAGATGCCACCTGCTGAG
AAGGCTTCCAGGATCAGAGCTGCTGAGAAGGTTTCCAGGGGCGATCAGGAATCTCCAGATG
CTTGTCTGCCTCCTGCAGTACCTGAAGCCCCAGCCCCACCCCAAAAGCCCCCTTAAGTCTCA
GAGCCAGAAACATCTTGACCTCCGCCCTTCTTTCTCCCTTTTACCTTCTATCAAGCCAAC
CGTTCGTAAGACCAGGCAAGATGGGAGTCAGGAAGCTCCAGAGGCTCCCTTGTCTCAGAG

CTGGAGCCTTTCCACCCAAAGCCTAAAATTAGAACTCGGAAGTCCTCCAGAATGACACCCTT
TCCAGCTACCTCTGCTGCCCCTGAGCCCCACCCTTCCACCTCCACAGCCCAGCCAGTCACT
CCCAAGCCCACATCTCAGGCCACTAGGAGCAGGACAAATAGGTCCTCTGTCAAGACCCCTG
AAGCAGTTGTCCCCACAGCCCCTGAGCTCCAGCCTTCCACCTCCACAGACCAGCCTGTCAC
CTCTGAGCCCACATCTCAGGTTACTAGGGGAAGAAAAAGTAGATCCTCTGTCAAGACCCCTG
AAACAGTTGTGCCCACAGCCCCTGAGCTCCAGCCTTCCACCTCCACCGACCGACCTGTCAC
CTCTGAACCCACCTCTCAGGCTACTAGGGGAAGAAAAATAGATCCTCTGTCAAGACCCCTG
AACCAGTTGTCCCCACAGCCCCTGAGCTCCAGCCTTCCACCTCCACAGACCAGCCTGTCAC
TTCTGAGCCCACATATCAGGCTACTAGGGGAAGAAAAATAGATCCTCTGTCAAGACCCCTG
AACCAGTTGTGCCCACAGCCCCTGAGCTCCGGCCTTCCACCTCCACAGACCGACCTGTCAC
CCCCAAGCCCACATCTCGGACCACTAGGAGCAGGACAAATATGTCCTCTGTCAAGACCCCT
GAAACAGTTGTCCCCACAGCCCCTGAGCTCCAGATTTCCACCTCCACAGACCAACCTGTCAC
CCCTAAGCCCACATCTCGGACCACTAGGAGCAGGACAAATATGTCCTCTGTGAAGAACCCT
GAATCAACIGTCCCTATAGCCCCTGAGCTCCCACCTTCCACCTCCACAGAGCAGCCTGTCAC
CCCTGAGCCCACATCTCGGGCTACTAGGGGAAGAAAAATAGATCCTCTGGCAAGACCCCT
GAAACACTTGTCCCCACAGCCCCTAAGCTCGAGCCTTCCACTTCCACAGACCAACCTGTCAC
TCCTGAGCCCACATCTCAGGCCACCAGGGGCAGGACAAATAGGTCCTCTGTGAAGACCCCT
GAAACAGTTGTCCCCACAGCCCCTGAGCTCCAGCCTTCCACCTCCACAGACCAGCCTGTTA
CCCCTGAGCCTACGTCTCAGGCTACTAGGGGAAGAACAGATAGATCCTCTGTCAAGACTCC
TGAAACAGTTGTCCCCACAGCCCCTGAGCTACAGGCTTCCGCCTCCACAGACCAGCCTGTC
ACCTCTGAGCCCACATCTCGGACCACTAGGGGAAGAAAAATCGGTCTCTGTCAAGACCC
CTGAAACAGTTGTGCCCGCAGCCCCTGAGCTCCAGCCTCCACCTCCACAGACCGACCTGT
CACCCCTGAGCCCACATCTCGGGCCACTAGGGGCAGGACAAATAGGTCTCTGTCAAGACC
CCTGAATCAATTGTCCCTATAGCCCCTGAGCTTCAGCCTTCCACCTCCACAGAACCCAGCTTGT
CACCCCTGAGCCCACATCTCGGGCCACTAGGTGCAGGACAAATAGGTCTCTGTCAAGACC
CCTGAGCCAGTTGTCCCCACAGCCCCTGAGCCCCTCCTACCACTCCACAGACCAGCCTG
TCACCCCCAAGCTCACATCTAGGGCCACTAGGAGAAAGACAAATAGGTCTCTGTCAAGACT
CCCAAACAGTTGAACAGCAGCCTCTGATCTTGAGCCTTTTACCCCCACAGACCAGTCCGT
CACCCCTGAGGCCATAGCTCAGGGTGGTCAGAGCAAAACACTGAGGTCTTCCACAGTAAGA
GCTATGCCGGTTCTACCACCCCTGAATCCAATCTCCTGTCAACACAGACCAGCCTATTTT
CCCTGAGCCTATTACTCAACCCAGTTGCATCAAGAGGCAGAGAGCCGCTGGGAACCCCTGGC
TCCCTCGCAGCTCCCATGACCATAAGCCTTGCTCTGCACCCTTGGAACCTAAATCCCAGGC
CTCAAGGAACCAAAGATGGGGAGCAGTGAGAGCAGCTGAATCCCTTACAGCCATTCTGAG
CCTGCCTCTCCCCAGCTTCTTGAGACACCAATTGCTCCTCCAGATCCAAAAGGTGGAACC
AGCAGGTAGATCTAGGTTACCCCCGAGCTCCAGCCTAAGGCCTCTCAAAGCCGCAAGAGG
TCTTTAGCTACCATGGATTACCAACCATCAAAAACAGCCCCAAAGAGGGGAAGTCTCCCA
GAAGACAGTGATTATCAAGGAAGAGGAAGAAGATACTGCAGAGAAGCCAGGGAAGGAAGAG
GATGTCGTGACTCCAAAACCAGGCAAGAGAAAGAGAGACCAGGCAGAGGAGGAGCCCAAC
AGAATACCAAGCCGACGCTCCGACGGACCAAACCTTAACCAAGAATCAACAGCCCCCAAAG
TGCTCTTACAGGAGTGGTGGATGCTCGGGGAGAGCGGGCTGTGCTGGCACTGGGGGGAA
GTCTGGCTGGTTCAGCGGCAGAGGCTTCCACCTGGTCACTGATCGCATCCGCCGGACAGT
CAAGTTCCTGTGTGCCCTGGGGCGGGGAATCCCCATTCTGTCCCTGGACTGGCTGCATCAG
TCCCGCAAGGCTGGTTTCTTACCCCCGGATGAATATGTGGTGACCGACCCTGAGCAAG
AGAAGAACCTTTGGCTTTAGCCTTCAAGACGCACTGAGCAGGGCTCGGGAGCGAAGGCTGCT
AGAGGGCTATGAGATCTATGTGACCCCTGGAGTCCAGCCACCACCACCTCAGATGGGAGAG
ATTATTAGCTGCTGTGGAGGCACATACCTACCCAGCATGCCTCGGTCTATAAGCCTCAGAG
AGTTGTGATCACATGCCCTCAGGACTTCCCTCATTGCTCCATTCCACTACGGGTTGGGCTGC
CCCTCCTCTCGCTGAGTTCTCTGCTGACTGGAGTGCTGAAGCAGGAAGCCAAGCCAGAGGC
CTTTGCTCTCTCCCTTTGGAGATGTCATCCACCTGA

Figure 27 (continued)

Figure 28
53BP1

>gi|5032189|ref|NP_005648.1| tumor protein p53 binding protein, 1; tumor protein 53-binding protein, 1; tumor protein p53-binding protein, 1 [Homo sapiens]

MDPTGSQLDSDFSQQDTPCLIIEDSQPESQVLEDDSGSHFSMLSRHLPNLQTHKENPVLDVVS
PEQTAGEERGDGNSGFNEHLKENKVADPVDSSNLDTCGSISQVIEQLPQPNRTSSVLGMSVES
APAVEEEKGEELEQKEKEKEEDTSGNTTHSLGAEDTASSQLGFGVLELSQSQDVEENTVPYEVD
KEQLQSVTTNSGYTRLSDVDANTAIAKHEEQSNEDIPIAEQSSKDIPVTAQPSKDVHVVEQNPPP
ARSEDMPFSPKASVAAMEAKEQLSAQELMESGLQIQKSPEPEVLSTQEDLFDQSNKTVSSDGC
STPSREEGGCSLASTPATTLLHLLQLSGQRSLVQDSLSTNSSDLVAPSPDAFRSTPFIVPSSPTEQ
EGRQDKPMDTSVLSEEGGEPFQKKLQSGEPVELENPPLLPESTVSPQASTPISQSTPVFPPGSL
PIPSQPQFSDHIFIPSPSLEEQSNKGKGDGMHSSSLTVECSKTSEIEPKNSPEDLGLSLTGDCS
KLMLSTSEYSQSPKMESLSSHRIDEDGENTQIEDTEPMSPVLNSKFVPAENDSILMNPADQGEV
QLSQNDKTKGDDTDTRDDISILATGCKGREETVAEDVCIDLTCDSGSQAVPSPATRSEALSSVL
DQEEAMEIKEHHPEEGSSGSEVEEIPETPCESQGEELKEENMESVPLHLSLTETQSQGLCLQKE
MPKKECSEAMEVETSVISIDSPQKLALDQELEHKEQEAWEETSEDSSVVIVDVKEPSPRVDVS
CEPLEGVEKCSDSQSWEDIAPEIEPCAENRLDTKEEKSVEYEGDLKSGTAETEPVEQDSSQPSL
PLVRADDPLRLDQELQQPQTQEKTSNSLTEDSKMANAKQLSSDAEAQKL GKPSAHASQSFCES
SSETPFHFTLPKEGDIIPLLTGATPPLIGHLKLEPKRHSTPIGISNYPESTIATSDVMSESMVETHDP
ILGSGKGDGAAPDVDDKLCLRMKLVSPETEASEESLQFNLEKPATGERKNGSTAVAESVASPQ
KTMSVLSCICEARQENEARSEDPPPTPIRGNLLHFPSSQGEEEEKEKLEGDHTIRQSQQPMKPISP
VKDPVSPASQKMVIQGPSSPQGEAMVTDVLEDQKEGRSTNKENPSKALIERPSQNNIGIQTMEC
SLRVPETVSAATQTIKNVCEQGTSTVDQNFQKQDATVQTERGSGEKPVSA PGDDTESLHSQGE
EEFDMPQPPHGHVLRHMRITIREVRTLVTTRVITDVYYVDGTEVERKVTEETEEPIVECQECETE
SPSQTGSSGDLGDISSFSKASSLHRTSSGTSLSAMHSSGSSGKGAGPLRGKTSGETPADFA
LPSSRGGPGKLSRPRKGVSTGTPVCEEDGDAGLGIRQGGKAPVTPRGRGRRRGRPPSRTTGTR
ETAVPGPLGIEDISPNLSPDDKSF SRVVRVPDSTRRTDVGAGALRRSDSPEIPFQAAAGPSDGL
DASSPGNSFVGLRVVAKWSSNGYFYSGKITRDVGAGKYKLLFDDGYECDVLGKDILLCDPIPLDT
EVTALSEDEYFSAGVVKGHRKESGELYYSIEKEGQRKWKYKRMVILSLEQGNRLREQYGLGPYE
AVTPLTKAADISLDNLVEGKRKRNSVSSPATPTASSSSSTTPTRKITESPRASMGVLSGKRKLIT
SEEERSPAKRGRKSATVKPGAVGAGEFVSPCESGDNTGEPSALEEQRGPLPLNKTFLGLYAFLL
TMATTSDKLASRSKLPDGPTGSSEEEEEFLEIPPFNKQYTESQLRAGAGYILED FNEAQCNTAYQ
CLLIADQHCRTKYFLCLASGIPCVSHVWVHDSCHANQLQNYRNYLLPAGYSLEEQRILDWQPR
ENPFQNLKVLVSDQQQNFLWSEILMTGGAASVKQHSSAHNKDIALGVFDVVVTDPSCPAS
VLKCAEALQLPVVSQEWVIQCLIVGERIGFKQHPKYKHDYVSH

Figure 29

>gi|5032188:174-6092 Homo sapiens tumor protein p53 binding protein, 1 (TP53BP1), mRNA
ATGGACCCTACTGGAAGTCAGTTGGATTGAGTTTCTCTCAGCAAGATACTCCTTGCCTGAT
AATTGAAGATTCTCAGCCTGAAAGCCAGGTTCTAGAGGATGATTCTGGTTCTCACTTCAGTAT
GCTATCTCGACACCTTCCTAATCTCCAGACGCACAAAGAAAATCCTGTGTTGGATGTTGTGT
CCAATCCTGAACAAACAGCTGGAGAAGAAGGAGGACGTAATAGTGGGTTCAATGAACA
TTTGAAGAAAACAAGGTTGCAGACCCTGTGGATTCTTCTAACTTGGACACATGTGGTCCAT
CAGTCAGGTCATTGAGCAGTTACCTCAGCCAAACAGGACAAGCAGTGTTCTGGGAATGTCA
GTGGAATCTGCTCCTGCTGTGGAGGAAGAGAAGGGAGAAGAGTTGGAACAGAAGGAGAAA
GAGAAGGAAGAAGATACTTCAGGCAATACTACACATTCCCTTGGTGCTGAAGATACTGCCTC
ATCACAGTTGGGTTTTGGGGTTCTGGAAGTCTCCAGAGCCAGGATGTTGAGGAAAATACTG
TGCCATATGAAGTGGACAAAGAGCAGCTACAATCAGTAACCACCAACTCTGGTTATACCAGG
CTGTCTGATGTGGATGCTAATACTGCAATTAAGCATGAAGAACAGTCCAACGAAGATATCCC
CATAGCAGAACAGTCCAGCAAGGACATCCCTGTGACAGCACAGCCAGTAAGGATGTACAT
GTTGTAAAAGAGCAAAATCCACCACCTGCAAGGTCAGAGGACATGCCTTTTAGCCCCAAAGC
ATCTGTTGCTGCTATGGAAGCAAAAGAACAGTTGTCTGCACAAGAACTTATGGAAAGTGGAC
TGCAGATTGAGAAGTCACCAGAGCCTGAGGTTTTGTCAACTCAGGAAGACTTGTGTTGACCAG
AGCAATAAAACAGTATCTTCTGATGGTTGCTCTACTCCTTCAAGGGAGGAAGGTGGGTGTTT
TTTGGCTTCCACTCCTGCCACCACTCTGCATCTCCTGCAGCTCTCTGGTCAGAGGTCCCTTG
TTCAGGACAGTCTTCCACGAATTCTTCAGATCTTGTGCTCCTTCTCCTGATGCTTTCCGAT
CTACTCCTTTTATCGTTCCTAGCAGTCCCACAGAGCAAGAAGGGAGACAAGATAAGCCAATG
GACACGTCAGTGTTATCTGAAGAAGGAGGAGAGCCTTTTTCAGAAGAACTTCAAAGTGGTGA
ACCAGTGGAGTTAGAAAACCCCTCTCCTGCCTGAGTCCACTGTATCACCACAAGCCTCAA
CACCATATCTCAGAGCACACCAGTCTTCCCTCCTGGGTCACTTCTATCCCATCCCAGCCT
CAGTTTTCTCATGACATTTTTATTCTTCCCCAAGTCTGGAAGAACAATCAAATGATGGGAAG
AAAGATGGAGATATGCATAGTTTATCTTTGACAGTTGAGTGTCTAAACTTCAGAGATTGAA
CCAAAGAATTCCCCTGAGGATCTTGGGCTATCTTTGACAGGGGATTCTTGCAAGTTGATGCT
TTCTACAAGTGAATATAGTCAGTCCCCAAAGATGGAGAGCTTGAGTTCTCACAGAATTGATG
AAGATGGAGAAAACACACAGATTGAGGATACGGAACCCATGTCTCCAGTTCTCAATTCTAAA
TTTGTTCCTGCTGAAAATGATAGTATCCTGATGAATCCAGCACAGGATGGTGAAGTACAAC
GAGTCAGAATGATGACAAAACAAAGGGAGATGATACAGACACCAGGGATGACATTAGTATTT
TAGCCACTGGTTGCAAGGGCAGAGAAGAAACGGTAGCAGAAGATGTTTGTATTGATCTCACT
TGTGATTGCGGGAGTCAGGCAAGTCCGTACCCAGTACTCGATCTGAGGCACTTCTAGTG
GTTAGATCAGGAGGAAGCTATGGAATTAAGAAACACCATCCAGAGGAGGGGTCTTCAGGG
TCTGAGGTGGAAGAAATCCCTGAGACACCTTGTGAAAGTCAAGGAGAGGAACTCAAAGAAG
AAAATATGGAGAGTGTTCCGTTGCACCTTTCTCTGACTGAAACTCAGTCCCAAGGGTTGTGT
CTTCAAAAGGAAATGCCAAAAAAGAATGCTCAGAAGCTATGGAAGTTGAAACCAGTGATGAT
TAGTATTGATTTCCCTCAAAGTTGGCAATACTTGACCAAGAATTGGAACATAAGGAACAGG
AAGCTTGGGAAGAAGCTACTTCAGAGGACTCCAGTGTTGTCTATTGTAGATGTGAAAGAGCCA
TCTCCCAGAGTTGATGTTTCTTGTGAACCTTTGGAGGGAGTGGAGAAGTGCTCAGATTCCCA
GTCATGGGAGGATATTGCTCCAGAAATAGAACCATGTGCTGAGAATAGATTAGACACCAAGG
AAGAAAAGAGTGTAAGATATGAAGGAGATCTGAAATCAGGGACTGCAGAAACAGAACCTGTA
GAGCAAGATTCTTCACAGCCTTCTTACCTTTAGTGAGAGCAGATGATCCTTTAAGACTTGAC
CAGGAGTTGCAGCAGCCCCAAACTCAGGAGAAAACAAGTAATTCATTAACAGAAGACTCAAA
AATGGCTAATGCAAAGCAGCTAAGCTCAGATGCAGAGGCCAGAGCTGGGGAAGCCCTCT
GCCCATGCCTCACAAAGCTTCTGTGAAAGTTCTAGTGAAACCCCATTTTCACTTTGCTT
AAAGAAGGTGATATCATCCCACCATGACTGGTGCAACCCACCTCTTATTGGGCACCTAAA
ATTGGAGCCCAAGAGACACAGTACTCCTATTGGTATTAGCAACTATCCAGAAAGCACCATAG
CAACCAGTGATGTCATGTCTGAAAGCATGGTGGAGACCCATGATCCCATACTTGGGAGTGG
AAAAGGGGATTCTGGGGCTGCCCCAGACGTGGATGATAAATTATGTCTAAGAATGAACTGG
TAGTCCTGAGACTGAGGCGAGTGAAGAGTCTTTGCAGTTCAACCTGGAAAAGCCTGCAACT
GGTGAAAGAAAAAATGGATCTACTGCTGTTGCTGAGTCTGTTGCCAGTCCCCAGAAGACCAT
GTCTGTGTTGAGCTGTATCTGTGAAGCCAGGCAAGAGAATGAGGCTCGAAGTGAGGATCCC
CCCACCACACCCATCAGGGGGAACTTGCTCCACTTTCCAAGTTCTCAAGGAGAAGAGGAGA
AAGAAAAATTGGAGGGTGACCATACAATCAGGCAGAGTCAACAGCCTATGAAGCCCATAGT
CCTGTCAAGGACCCTGTTTCTCCTGCTTCCAGAAGATGGTCATACAAGGGCCATCCAGTCC

TCAAGGAGAGGCAATGGTGACAGATGTGCTAGAAGACCAGAAAGAAGGACGGAGTACTAAT
AAGGAAAAATCCTAGTAAGGCCTTGATTGAAAGGCCAGCCAAAATAACATAGGAATCCAAAC
CATGGAGTGTTCCCTTGAGGGTCCCAGAACTGTTTCAGCAGCAACCCAGACTATAAGAATG
TGTGTGAGCAGGGGAGCAGTACAGTGGACCAGAACTTTGGAAAGCAAGATGCCACAGTTCA
GACTGAGAGGGGGAGTGGTGAGAAACCAGTCAGTGCTCCTGGGGATGATACAGAGTCGCT
CCATAGCCAGGGAGAAGAAGAGTTTTGATATGCCTCAGCCTCCACATGGCCATGTCTTACATC
GTCACATGAGAACAATCCGGGAAGTACGCACACTTGTCACCTCGTGTCTATTACAGATGTGTAT
TATGTGGATGGAACAGAAGTAGAAAGAAAAGTAAGTGAAGGAGACTGAAGAGCCAATTGTAGA
GTGTCAGGAGTGTGAACTGAAGTTTCCCCTTCACAGACTGGGGGCTCCTCAGGTGACCTG
GGGGATATCAGCTCCTTCTCCTCCAAGGCATCCAGCTTACACCGCACATCAAGTGGGACAA
GTCTCTCAGCTATGCACAGCAGTGGAAAGCTCAGGGAAAGGAGCCGGACCACTCAGAGGGA
AAACCAGCGGGACAGAACCCGCAGATTTTGCCTTACCCAGCTCCCGAGGAGGCCAGGAAA
ACTGAGTCCTAGAAAAGGGGTGAGTCAGACAGGGACGCCAGTGTGTGAGGAGGATGGTGA
TGCAGGCCCTTGGCATCAGACAGGGAGGGGAAGGCTCCAGTCACGCCTCGTGGGCGTGGGCG
AAGGGGCGGCCACCTTCTCGGACCACTGGAACCAGAGAAACAGCTGTGCCTGGCCCCCTT
GGGCATAGAGGACATTTACCTAACTTGTACCAGATGATAAATCCTTCAGCCGTGTCTGTG
CCCGAGTGCCAGACTCCACCAGACGAACAGATGTGGGTGCTGGTGCTTTGCGTCGTAGTGA
CTCTCCAGAAATTCCTTTCCAGGCTGCTGCTGGCCCTTCTGATGGCTTAGATGCCTCCTCTC
CAGGAAATAGCTTTGTAGGGCTCCGTGTTGTAGCCAAGTGGTCATCCAATGGCTACTTTTAC
TCTGGGAAAATCACACGAGATGTCCGAGCTGGGAAGTATAAATTGCTCTTTGATGATGGGTA
CGAATGTGATGTGTTGGGCAAAGACATTCTGTTATGTGACCCCATCCCGCTGGACACTGAAG
TGACGGCCCTCTCGGAGGATGAGTATTTCAAGTGCAGGAGTGGTGAAAGGACATAGGAAGGA
GTCTGGGGAACTGTACTACAGCATTGAAAAAGAGGCCAAAGAAAGTGGTATAAGCGAATG
GCTGTCATCCTGTCTTGGAGCAAGGAAACAGACTGAGAGAGCAGTATGGGCTTGGCCCCCT
ATGAAGCAGTAACACCTCTTACAAAGGCAGCAGATATCAGCTTAGACAATTTGGTGGAAGGG
AAGCGGAAACGGCGCAGTAACGTACAGTCCCCAGCCACCCCTACTGCCTCCAGTAGCAGCA
GCACAACCCCTACCCGAAAGATCACAGAAAGTCTCGTGCCTCCATGGGAGTTCTCTCAGG
CAAAAGAAAACCTTATCACTTCTGAAGAGGAACGGTCCCCTGCCAAGCGAGGTGCGAAGTCT
GCCACAGTAAAACCTGGTGCAGTAGGGGCAGGAGAGTTTGTGAGCCCCTGTGAGAGTGGA
GACAACACCGGTGAACCCTCTGCCCTGGAAGAGCAGAGAGGGCCTTTGCCTCTCAACAAGA
CCTTGTTTCTGGGCTACGCATTTCTCCTTACCATGGCCACAACCAGTGACAAGTTGGCCAGC
CGCTCCAAACTGCCAGATGGTCTACAGGAAGCAGTGAAGAAGAGGAGGAATTTTTGGAAA
TTCCTCCTTTCAACAAGCAGTATACAGAATCCCAGCTTCGAGCAGGAGCTGGCTATATCCTT
GAAGATTTCAATGAAGCCAGTGTAACACAGCTTACCAGTGTCTTCTAATTGCGGATCAGCA
TTGTGGAACCCGGAAGTACTTCTGTGCCTTGCCAGTGGGATTCTTGTGTGTCTCATGTCT
GGGTCCATGATAGTTGCCATGCCAACCAGCTCCAGAACTACCGTAATTATCTGTTGCCAGCT
GGGTACAGCCTTGAGGAGCAAAGAATTCTGGACTGGCAACCCCGTGAAAATCCTTTCCAGA
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CTCATGACTGGTGGTGCAGCCTCTGTGAAGCAGCACCATTCAAGTGCCCATACAAAGATAT
TGCTTTAGGGGTATTTGATGTGGTGGTGACGGACCCCTCATGCCAGCCTCGGTGCTGAAG
TGTGCTGAAGCATTGCAGCTGCCTGTGGTGTCAAGAGTGGGTGATCCAGTGCCTCATTG
TTGGGGAGAGAATTGGATTCAAGCAGCATCCAAATATAAACACGATTATGTTTCTCACTAA

Figure 29 (continued)

Figure 30
Rad9

>gi|6320423|ref|NP_010503.1| Required for DNA damage-induced G2 arrest in mitosis, required for ionizing radiation-induced G1 arrest, and other cdc13-induced G2 arrest in meiosis; Rad9p [Saccharomyces cerevisiae]

MSGQLVQWKSSPDRVTQSAIKEALHSPLADGDMNEMNVPVDPLENKVNSTNIEGSPKANPNPV
KFMNTSEIFQKSLGLLDESPRHDELNIEVGDNDRPNANILHNERTPDLDRIANFFKSNRTPGKE
NLLTKYQSSDLEDTPMLRKKMTFQTPTDPLEQKTFKKLKSDTGFCYYGEQNDGEENASLEVTE
ADATFVQMAERSADNYDCALEGIVTPKRYKDELSKSGMQDERVQKTQIMISAESPNSISSYDK
NKITGNGRTRTNVNKVFNNNEDNIGAIEEKNPVKKKSENYSSDDLRENNQIIQSNESEEINELEK
NLNVSGRENDVNNLDIDINSAVSGTPSRNNAEEEMYSSSVNNREPSKKWIFRYSKDKTENNSN
RSTQIVNNPRTQEMPLDSISIDTQPLSKSFNTETNNELETQIIVSSLSQGISAQKGPVFHSTGQTEE
IKTQIINSPEQNALNATFETPVTLSRINFEPILVPEVTPSSPSKNTMSKPSNSSPIPEKDTFNIHERE
VETNNVFSNDIQNSSNAATRDDIIAGSSDFNEQKEITDRIYLQLSGKQISDSGSDETERMSPNEL
DTKKESTIMSEVELTQELPEVEEQDLQTSPPKKLVVEETLMEIKKSKGNSLQLHDDNKECNSDK
QDGTESLDVALIEHESKGQSSELQKNLMQLFPSESQEIIQNRRTIKRRQKDTIEIGEEEEENRSTKT
SPTKHLKRNSDLDAASIKREPSCSITIQTGETGSGKDSKEQSYVFPEGIRTADNSFLSKDDIIFGNA
VWCQYTWNYKFYPGILLEVDTNQDGCWIIYFETGRSLTKDEDIYYLDIRIGDAVTFDNEYVVVGL
ECRSHDLNIIRCIRGYDTVHLKKKNASGLLGKRTLIALSSISLDLSEWAKRAKIILEDNEKNKGDA
YRYLRHPIRGRKSMTNVLSPKKHTDDEKDNTHTEVYNNEIESSEKKEIVKKDSRDALAEHAGA
PSLLFSSGEIRTGNVFDKCFVLTSLFENREELRQTIESQGGTVIESGFSTLFNFTHPLAKSLVNKG
NTDNIRELALKLAWKPHSLFADCRFACLITKRHLRSLKYLETLALGWPTLHWKFISACIEKKRIVPH
LIYQYLLPSGESFRLSLDSPSKGGIISNNIFSFTYQFLRGSNLRDQICGVKKMLNDYIVIVWGRSE
LDSFVKFAFACLSAGRMLTIDLPNIDVDDTEPLLNALDSLVPRISELSNRKLKFLIYANENNGKSQ
MKLLERLRSQISLKFKKFNYIFHTESKEWLIQTIINEDTGFDHDDITDNDIYNTISEVR

Figure 31

>gil37362627:c903471-899542 *Saccharomyces cerevisiae* chromosome IV, complete
chromosome sequence

ATGTCAGGCCAGTTAGTTCAATGGAAAAGCTCTCCAGATCGAGTCACCCAAAGCGCTATAAA
GGAAGCACTGCATTCTCCCTTGGCTGATGGCGACATGAACGAAATGAATGTTCCCGTTGATC
CGTTGGAAAACAAGGTAAATAGCACAAACATAATCGAAGGAAGTCCCAAAGCAAATCCAAAT
CCTGTCAAGTTTATGAATACAAGTGAGATATTTCAAAAATCTCTGGGATTACTTGACGAGAGT
CCAAGACATGATGATGAGTTAAATATTGAAGTAGGAGATAATGATCGACCAAATGCTAACATA
TTGCATAATGAAAGGACTCCTGACCTTGACCGAATTGCTAACTTTTTCAAAAGCAAATCGAACC
CCTGGTAAAGAAAATCTTTTGACCAAATATCAAAGCTCCGATCTGGAAGACACTCCTCTGATG
TTAAGAAAAAAAATGACTTTTTCAAACCTCAAATGATCCATTGGAACAGAAAACCTTCAAAAAG
TTGAAGTCAGATACTGGGTTTTGCTATTATGGAGAGCAGAATGATGGAGAAGAAAATGCGTC
ATTAGAAGTTACAGAGGCGGATGCCACTTTGTACAGATGGCTGAACGTTCTGCTGATAATT
ATGAGTGTGGATTGGAAGGAATTGTTAGAGCTAAAAGATATAAAGACGAATTAAGTAAAAGTG
GAGGAATGCAAGATGAACGAGTTCAAAAACTCAAATCATGATATCAGCAGAATCACCTAATT
CGATAAGCTCTTATGACAAGAACAAAATTACCGGGAATGGCCGGACCACAAGAAATGTAAAC
AAGGTTTTTAACAATAACGAAGATAACATAGGAGCTATCGAGGAAAAAAATCCAGTAAAAAAG
AAAAGTGAGAACTATTCATCAGATGATCTCAGAGAACGGAACAATCAAATAATACAAAGTAAT
GAATCAGAGGAGATTAACGAATTGGAAAAGAATCTGAATGTTTCGGGTAGAGAGAATGACGT
GAACAATTTAGATATCGATATTAATAGTGCTGTGTCTGGCACCCCTTCACGCAACAATGCGG
AAGAAGAAATGTATTCCAGTGAGAGTGTAACAATCGGGAACCATCCAAGAAGTGGATATTC
CGATACTCAAAGACAAAACGGAAAATAATAGCAATAGATCTACGCAAATAGTCAATAATCCA
AGAACACAGGAAATGCCTTTAGATAGTATTTCAATCGATACGCAACCCTTATCTAAAAGTTTC
AATACCGAAACAAATAATGAATTAGAGACACAGATAATTGTTTCATCGCTTTCCCAAGGCATA
TCTGCTCAGAAGGGACCTGTTTTTCACTTCTACTGGCCAGACAGAAGAAATAAAAACCCAAATA
ATAAATCTCCTGAACAAAATGCTTTGAATGCAACCTTTGAAACTCCCGTTACTCTTTCTCGG
ATTAATTTGAACCCATATTGGAAGTTCCTGAGACTAGTTCACCATCTAAGAATACGATGTCA
AAACCTCGAATTCTTCACCTATTCCGAAGGAAAAAGATACATTTAATATACACGAGAGAGAA
GTAGAGACAAACAATGTTTTTCAAACGATATACAAAATTCTCAAATGCAGCTACCAGAGAT
GACATTATCATAGCCGGTTCATCTGATTTCAACGAACAAAAGGAAATAACCGATAGAATATAC
TTACAACCTTCAGGAAAGCAAATATCTGATTCAGGAAGTGATGAAACAGAACGTATGTCCCCA
AATGAGCTTGATACGAAAAAGGAAAGTACAATCATGAGCGAGGTTGAACTAACCCAAGAACT
GCCTGAAGTTGAAGAGCAGCAAGATCTTCAAACGTCTCCAAAAAGCTGGTAGTCGAGGAA
GAACTTTAATGGAGATAAAAAAAGCAAGGGGAACCTCACTTCAGCTTCATGATGATAATAAA
GAATGCAATTCAGATAAACAAGATGGCAGAGAGTCTTTGGATGTAGCTTTGATTGAACACGA
AAGCAAAGGACAGACTCAGAACCTCAGAAAAACCTCATGCAATTATTTCCAAGTGAGTCAC
AGGAGATTATTCAGAACCAGGAACAATAAAGCGACGTCAAAAAGATACAATAGAGATCGGT
GAAGAGGAGGAGAACAGAAGCACTAAGACATCACCGACAAAACACCTCAAAAAGAAATTCAG
ATTTGGATGCTGCTTCTATCAAAAAGGGAACCGTCTTGACAGCATTACCATACAAACAGGGGAG
ACAGGTTCCGGGCAAAGACTCTAAAGAACAGTCTTACGTGTTTCCTGAAGGTATTAGAACGGC
AGATAATAGTTTCTTATCGAAAGACGACATAATTTTTGGAAATGCGGTATGGTGTCAGTATAC
GTGGAATTACAAATTTTATCCGGGTATTTATTGGAAGTTGACACTAATCAAGATGGCTGTTG
GATTTATTTGAAACAGGAAGATCGCTAACCAAGATGAGGACATCTACTACTTAGATATTAG
AATAGGGGATGCTGTTACCTTTGATGGAATGAGTACGTAGTCGTTGGTCTAGAATGTCGTA
GCCATGATCTCAACATAATAAGATGTATTCGAGGATATGATACGGTTCATTTGAAAAA
ATGCAAGCGGATTGTTGGGGAAAAGGACGTTAATTAAAGCACTAAGCTCGATCAGTCTTGAC
CTAAGCGAGTGGGCTAAAAGAGCGAAGATCATATTAGAAGATAATGAGAAAAATAAAGGCGA
CGCGTATAGGTACTTGAGACATCCCATTAGGGGAAGGAAATCAATGACCAATGTTCTGTCTC
CGAAGAAACATACTGATGACGAAAAGGACATAAATACGCATACTGAAGTGTACAATAACGAA
ATAGAATCGAGCTCCGAAAAGAAGGAAATTGTTAAAAGGATTCTAGAGACGCATTAGCTGA
ACATGCAGGAGCGCCAAGCCTGCTTTTTCTTCTGGTGAAATCAGAACAGGGAATGTATTTG
ATAAATGTATTTTTGTTTTGACAAGCCTATTCGAAAATAGAGAGGAACTTCGACAGACCATTG
AATCGCAAGGCGGCACTGTAATTGAGTCAGGATTTTCACTTTATTTAACTTCACTCATCCGC
TAGCTAAATCTTTAGTCAATAAAGGTAATACAGATAATATTGAGAATTGGCCTTGAAGCTAG
CCTGGAAACCTCATTCCCTATTTGCAGACTGCAGATTTGCTTGCCTAATCACAAAACGGCATT
TAAGAAGCTTAAAGTACTTAGAACTTTGGCGTTGGGGTGGCCTACACTACACTGGAAATTC

ATAAGTGCATGCATTGAAAAGAAAAGAATAGTACCACATTTAATATACCAATACCTATTACCTT
CGGGTGAAAGTTTTTCGGTTATCGTTAGATTCTCCATCAAAGGGAGGAATCATTAAATCCAACA
ATATTTTTTCATTTTATACACAATTCCTACGCGGATCTAATTTAAGAGATCAGATATGTGGAGT
GAAGAAAATGTAAATGACTACATTGTTATTGTTTGGGGTAGATCTGAGTTGGACAGTTTTGT
CAAATTTGCTTTTGCATGTTTGAGCGCAGGTAGAATGCTTACAATTGATTTACCCAATATTGA
TG TAGATGATACAGAGCCATTGTTAAATGCCTTAGATTCTTTAGTACCCAGAATAGGATCAGA
ATTATCTAATCGAAAGTTAAAGTTTCTCATATATGCTAACGAAAATAATGGTAAATCTCAGATG
AAGCTTCTCGAAAGATTGAGAAGTCAAATATCACTGAAATTTAAGAAATTTAATTACATATTTT
CACTGAATCTAAAGAATGGCTAATTCAGACAATAATTAACGAGGACACTGGTTTTTCACGATG
ATATTACGGACAATGATATATACAACACTATTTCTGAGGTTAGATGA

Figure 31 (continued)

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